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# Clinical Lecture
ON
# A CASE OF GANGRENOUS APPENDICITIS, WITH SUBPHRENIC ABSCESS.

*Delivered at Guy's Hospital*

BY CHARTERS J. SYMONDS, M.S. LOND., F.R.C.S. ENG.,

SURGEON TO GUY'S HOSPITAL; EXAMINER IN SURGERY AT THE UNIVERSITY OF LONDON.

GENTLEMEN,—No apology is needed for bringing this subject before you to-day in view of the uncertainty prevailing in the minds of many as to the moment for operation and also in view of the increased frequency of the malady. The case forming the subject of this lecture was one of three operated upon on the same day, all being acute cases. My remarks will be limited to the acute forms of appendicitis, cases which die early, cases where operation must be performed within three days and sometimes within 24 hours. It is impossible within the scope of one lecture to deal adequately with this branch of the subject and the remarks will therefore be confined to the points raised by a single case.

The patient, a girl, 16 years of age, on Thursday, Feb. 4th, did not feel very well but being anxious to go to a party made no complaint. During the evening she had abdominal pain and on returning home this was severe. She spent a restless night and there was much pain but she did not call for assistance. On the next day, Friday, the pain continued and she was frequently sick. As the menstrual period began on this day less importance was attached to the symptoms by the girl's mother. On Saturday, the 6th, medical advice was sought. The girl on the morning of this day was found with great pain in the right iliac region. The temperature was 101° F. and the pulse was 104. As the pain was less a sedative was not administered. All day she remained ill and in pain. In the evening the temperature was 104°, the pulse was 120, and I was telephoned to for advice as her medical attendant considered the symptoms severe. In this view I concurred and added that if the temperature kept up and the pain continued for 12 hours an operation ought to be performed at once. Next morning (Sunday) the temperature was 104°, the pulse was 120, and the pain was still severe. At 5 P.M. on this day—the third of the illness—I saw the patient. She showed marked general irritation, in a flushed face, a distressed look, a restless manner, a temperature of 104°, and a pulse of 120. So it may be taken that the temperature had been at this level continuously for over 24 hours. There had been no sickness during the day but she had taken very little food. The right iliac region was extremely tender and here a definite swelling could be felt, but the tenderness was too great for accurate examination. There was no general distension of the abdomen and as there had been no rigor there was less fear of metastatic deposits having already occurred.

The question of operation had to be decided and, moreover, a prognosis given as to the result that would attend such an undertaking. The following points were raised as indicating the wisdom of immediate operation:—The onset of the case had not been sudden—i.e., the girl had not been seized with sudden alarming pain, as we commonly see both in severe cases and in many cases where the attack is short and carries little risk. It will be noticed that the patient felt ill on Thursday but was able to conceal her distress and to go to an evening dance. Gradually the pain increased and vomiting began some hours later. Probably on Thursday the temperature, if taken, would have been found raised.

This form of onset indicates a septic inflammation in the wall of the appendix, a process that precedes perforation, is often painless and, so far as my experience goes, points to a grave issue. I mean to convey that an onset of this kind, if followed by a continuous temperature and especially if followed in 24 or 48 hours by acute pain, always demands early operation. This is the type also that leads to septic absorption with metastatic abscess in the liver or in the lung, or again to subdiaphragmatic abscess.

As an illustration of the importance of this period antecedent to the attack proper, let me refer to the case of a man, about 40 years of age. On Thursday he felt, as he said, "seedy" and paid a casual visit to a medical friend, not his usual attendant. On the next day he took a pill and was not quite up to his duties. During the night—to be more accurate about 4 A.M. on Saturday—he was seized with severe abdominal pain and when seen an hour later he was in a state of collapse. His medical adviser very properly gave a full hypodermic dose of morphine and went home to prepare for immediate operation. When next seen the patient was so comfortable that interference was postponed. The delay was fatal, for the patient died three days later without developing any alarming symptoms till the last few hours. Had the full value of the two days' malaise been appreciated and an operation made on the Sunday success would in all probability have followed. Had the attack of pain been the initial symptom in reality, and therefore due to kinking or sudden distension behind a stricture or even perforation, the postponement with careful watching would have been justified. When asked to advise on such a case—i.e., on one where acute symptoms follow a history of indefinite illness given by the patient—I always press for immediate operation.

What does this early stage indicate? If carefully observed it will be found to be one of pyrexia, the severity depending upon the virulence of the poison. A girl, 11 years old, complained of headache and her mother thought that she was looking "out of sorts." Taking her temperature she found it to be 103° F. Of this she thought little, as the child was subject to stomach attacks and rapid rises of temperature. Next day the temperature was still over 100° and in the evening stood at 102°, and the child had indefinite stomach-ache. A medical man was sent for next morning, and though there was a suspicion of localised tenderness it was not sufficient to justify a complete diagnosis. Next day, however, the diagnosis was clear. When called to this case the temperature had been raised four days, never falling to normal, and not showing the usual excursions of the mild or hectic type. The swelling was localised and the general condition was good. Still, as the pyrexia indicated a progressive septic process in the appendix itself, carrying with it not only the danger of rapid extension of local suppuration but also of septic absorption, operation was advised. A large abscess extending to the pelvis was evacuated, a gangrenous appendix was removed, and though the septic condition retarded recovery a few days it was complete and rapid. This case occurred some six years ago.

I want to impress upon you by the introduction of these two cases the value of the period preceding an acute onset or signs of localised suppuration. The early observation of the temperature by this child's mother gave us nearly two days' information and determined operation on apparently the third day, really the fifth. I have often quoted this case to justify the household use of the thermometer, for its employment by mothers is more often laughed at than commended. I want you to learn that the stage of malaise is a pyrexial one, that when acute pain follows, as it did in the man, immediate operation is demanded, even when we have the patient's history alone as a guide. The case of the child will show you that a septic process has been in operation and we learn that sudden pain or rapid advance of local signs means perforation or rapid extension, not early distension or kinking. The second point was the continuously elevated temperature. We must note that it was not a question of a morning fall and an evening rise nor of marked excursions, but the temperature early rose to 104° and remained more or less at this level for over 24 hours. When this sign persists on the third or the fourth day it indicates a gangrenous infection of the appendix and, I believe, always demands operation. The great danger in such a condition is that of septic absorption, which exists all the time the temperature is raised. Remember the great and fundamental fact—i.e., the *temperature falls to normal and remains there when the septic process in the appendix has ceased, provided no secondary deposit has formed elsewhere.* Also remember, *that with the return to a normal temperature the abscess may nevertheless be extending in the peritoneum. Even if the pus be very foul, the peritoneum does not absorb the septic poison.* I do not wish to convey to you the notion that temperature is the main sign of danger. When you stand beside these

cases you will recognise the symptoms always associated with septic poisoning, symptoms of as great value as the pyrexia itself. It is more difficult to make friends see the importance of the restless state, the loss of appetite, the flushed face, the irritable and rapid pulse. Often the patient is said to be nervous, excited, and the general signs are belittled. Then a high temperature is convincing to friends and is of the greatest service, as a lever, in moving away objections.

These, then, were the three main grounds for advising immediate operation—viz., the prodromal stage followed by a rapid development of symptoms, the continuous high temperature, and the accompanying signs of septic poisoning. One great and serious doubt remained. Had a metastatic deposit already formed, possibly rendering operation useless? There were no physical signs of pneumonia, one of the most common complications but happily a recoverable one; nor was there any general abdominal distension. The question of hepatic infection one could not so easily exclude, for it is well known that in the early stages this infection gives few localising symptoms. As it is always a fatal complication operation on the appendix gives only temporary relief.

These then were the questions before us at the consultation. To my mind the necessity for immediate operation was obvious and no objection was raised. Moreover, we must not be content with opening and draining an abscess in such cases. The appendix must be removed to prevent further septic absorption. The choice of method was of some interest. The case having been seen early—viz., the end of the third day—the amount of pus being probably small, and as, moreover, the swelling was in the most accessible position, I elected to split the muscles as giving the strongest abdominal wall and also in the circumstances a sufficient opening. I have in the wards pointed out to you the obvious objections to dividing the abdominal muscles where pus is present and have advocated in all acute cases where possible the muscle-splitting operation. In cases where the appendix occupies an unusual position, e.g., in the pelvis or the loin, or in relapsing cases where also extensive adhesions are expected, then we must enter through the rectus sheath to obtain unlimited space. As the swelling in this case was close to the iliac spine the muscles were split and foul pus was evacuated at once, the general peritoneum as yet being unopened. Carefully all pus was mopped away with plain gauze boiled with the instruments and with dry cyanide gauze. Then the appendix was separated from the iliac fossa and the route to the pelvis was opened. Down into the pelvis was pushed a long strip of plain gauze which had been boiled just beforehand. Another piece was passed under the anterior abdominal wall and a third into the loin, all three pieces being held in forceps. Then the appendix was drawn out and its mesentery was ligatured and divided. The appendix was ligatured close to the cæcum without any preliminary turning down of a cuff or subsequent burying of the stump. Again the cavity left was carefully cleansed with gauze pads. Then the pelvic strip was withdrawn and was found to be soaked with blood-stained fluid. This could not have arisen during the operation as no fluid was introduced and was no doubt serum derived from the infected peritoneum. In a few hours this would have become foul pus. Several times the pelvis was dry mopped. Then the other two gauze strips were removed and were found to be clean. To exclude accumulations in other localities a pad was passed well into the right loin and another over into the left iliac fossa without discovering any serum or pus.

You will notice, please, that irrigation was not employed. On another occasion I will bring forward evidence to show that it is unnecessary and I believe also adds additional dangers in all cases, especially in the form now under consideration. A drain made of a large rubber tube surrounded with a thick layer of cyanide gauze was passed down to the bottom of the pelvis and a salmon-gut suture was inserted in either end of the skin incision. Let me delay for one moment over this method of draining. It has the advantage of shutting off the peritoneal cavity and of allowing the escape of serum. Gauze is essential in draining all these intra-abdominal abscesses as it promotes rapid adhesion. An uncovered rubber or glass tube does not do this and even where the peritoneum has apparently not been opened a small crack may have extended through the inflammatory material. Extension may occur through this unnoticed crack when a rubber tube only has been used but the gauze will prevent it. The only other method of using the gauze, and one giving even greater certainty and to be employed when there has not been sufficient time to clean the cavity effectually is to pack in first a broad web of gauze and to fill up the cavity thus formed with strips. I now when using this method place the gauze-covered rubber tube in the centre and then fill with gauze round it. Finally, this gauze should be wrung out of a strong antiseptic—1 in 20 carbolic or a 2 per cent. lysol, &c. The usual gauze dressing was applied and the patient was put into bed.

We had reason to be well satisfied with our work and especially was it my duty to congratulate my medical friends upon submitting the patient so early to operation and upon withholding opium and thus allowing me to see the worst aspect of the case. Too often is one called late because of the fear that operation increases the danger. Gentlemen, I hope to show you in this or the next lecture that operation should add little or no danger apart from the general risks. In leaving the case I was obliged, however, from a fairly large experience of these cases to say that though no evidence existed at the moment, yet the possibility of a septic deposit already having formed in or about the liver could not be excluded. Had there been no ingravescent stage, no continuous elevation of the temperature, and had the signs of acute general poisoning been absent, one would not have left this one cloud behind. On the next day the temperature was 100°, the pulse was 80, and all looked well. Then signs of general irritation returned, the liver was observed to be lower than normal, and on examining the base of the lung signs of pneumonia were noticed. The breathing was not laboured, nor was there any pain or cough. The temperature again rose and when I inquired on the Friday, the fifth day from the operation, it was 103°, the pulse had risen, and the basal signs were more marked. The operation wound was reported to be doing well. As described through the telephone these signs indicated the existence of a secondary infection in one of three situations—in the lung, in the liver, or in the peritoneum under the diaphragm. The pulmonary infection is nearly always in small areas and often multiple and not basal. Sometimes the clinical examination reveals very little. Though I have had several cases recover with marked pulmonary infection, in none has there been typical basic pneumonia. This is indeed the usual experience. The occurrence of marked jaundice on the second day after the operation was in favour of hepatic abscess. This is not the place to discuss the early signs of this complication. The subject has been well treated in our Reports recently by Dr. J. H. Bryant and some years ago by Dr. R. E. Carrington. As described to me the case sounded more like a subphrenic abscess. The liver was depressed—or was it swollen from perityphlitis? The pulmonary signs indicated lung pressure and œdema from a neighbouring infective centre. Suspecting fluid a needle had been twice inserted, on one occasion removing a few drops of serum.

All this information was obtained by telephone, the patient living in the country. My answer was that a subphrenic abscess probably existed, that it was invading the diaphragm, had already given rise to pulmonary œdema, and that we must interfere at once or it would rupture into the pleura or the lung. I arranged to go early next morning. On arrival at 8.30 on Saturday (Feb. 20th) I was met with the remark, "The girl is very bad: she has been coughing up foul pus since 5 o'clock." The event predicted had occurred. Was the pus thin and pale or was it blood-stained and chocolate in colour? The first would mean a subphrenic abscess and a hopeful outlook; the second a hepatic abscess, in which operation could only relieve and retard the fatal result. I found the patient in the greatest distress, with a flushed face, rapid breathing, and great pain in the side. The breath was fæcal in odour and she was constantly expectorating thin stinking fluid. It was clear that a subphrenic abscess had perforated into the lung and opened a good-sized bronchus. The pleura had been sealed off, for lung sounds could be heard down to the base.

There were no time and no necessity for prolonged clinical examination, except to localise the abscess and to ascertain the best position for incision. Chloroform was administered and the subphrenic region was explored from behind with an aspirator. Three punctures gave no results. Then percussion in front gave a resonant note, with a characteristic dead vibration as of a cavity with an opening, and here pus was found. By this time the girl's condition was much worse. Some 20 minutes had elapsed since she began the inhalation and gradually her colour was becoming more

dusky and the respirations were quicker and shorter. It was evident, in fact, that the pus was all the while trickling into, and filling, the lung. Rapidly a piece of the eighth rib was removed in the anterior axillary line, the healthy pleura was opened, and the diaphragm was exposed. This was cut through with a knife, when at once came a rush of thin foul pus, projecting a foot from the surface of the body. The diaphragm was held up against the side with the left forefinger while the cavity was irrigated. Then two large drainage-tubes surrounded with gauze were inserted so as completely to plug the opening and to compress the diaphragm against the ribs. The breathing quieted and the colour improved at once. The collection was above the liver, to the right of the suspensory ligament, and was bounded below by the stomach and colon and amounted to close on two pints. The pleura was free. Looking in through the large opening, for it was near two inches long, one could see the diaphragm and the liver. Desperate as was the condition the outlook was still favourable, for there was no hepatic infection, the general peritoneum showed no irritation, and there was no pneumonia.

On Monday, two days later, I saw the girl again. All urgent symptoms had subsided and there was a free escape of thin pus. For a few hours in the morning of this day the foul expectoration had returned; this was due to the gauze blocking the tube. The gauze being loose I removed both tubes and re-inserted one covered again with gauze. It was interesting to notice that in the period of about 56 hours the pleural cavity had been fully sealed. Rapid progress towards recovery followed. I noticed that the appendix wound was quite insignificant on this the tenth day from the first operation.

Before adding some general remarks it may be asked whether this second operation might not have been delayed in view of the generally recognised opinion that subphrenic abscesses opening into the lung do well. In this case the conditions were acute, the pus was thin and abundant, and delay would, I believe, have been fatal. Personally, I do not think it wise to leave any case to itself where the pus is being expectorated. In empyema and in hepatic abscess I have seen great loss of time and much loss of strength result. The immediate relief to all symptoms following free incision fully justifies early operation. Going back for a moment it must be noted that the first operation was made fairly early in the case—the third day or beginning of the fourth. If we were in a position to say that no danger need be introduced by operation then early interference should be our rule when symptoms do not spontaneously subside—i.e., without the use of opium. I operated eight years ago on a case within 20 hours of onset because pain was not relieved. I found an abscess with a perforation at the root of the appendix. The appendix was removed, the cæcum was closed, and without any drain the patient, a woman, 30 years of age, did well.

Since I have adopted the plan of free incision, dry mopping, and drainage with gauze the results have greatly improved. In borderland cases operated upon on the fifth or sixth day I am certain that flushing will turn the scale to a fatal issue. Some of my earlier cases would probably have recovered had this method been omitted. In very early cases —i.e., those operated upon in from 24 to 36 hours—recovery will generally follow with any method, provided all septic material existing at the time be removed. Even incomplete removal of pus without drainage may succeed, as I will show you another time. I mention the fact here to impress the importance and the safety of early operation.

My working rule is a simple one and it is this. After the initial pain has been relieved by a full sedative the persistence of any one sign of extension should cause anxiety and determine operation on the second, third, or fourth day, or in the worst cases earlier. A patient who required opium at the end of 48 hours should, as a rule, not have the drug but an operation. Some leading sign will certainly be present. There will be a continuously high temperature, associated with signs of general irritation, as in the case related here, or continued pain, or abdominal distension unrelieved by remedies, or an increasing swelling, or signs of extension in vesical and rectal straining. Or again, after a restful, peaceful period, there may be on the second day a recrudescence, this last to me always a determining condition. Or there may be sickness. Many have said to me, "He is better, because there has been no sickness for four days." My reply always to that statement is this, How do you know when you have given nothing by the mouth? In such a case I gave a man a bowl of milk at 7 o'clock and he kept it down and at 10 o'clock was no worse. I ordered another, convinced that he had a stomach full of foul material. In six hours he vomited a basinful of foul brown fluid and all were convinced of the necessity of operation but it was too late. Absence of vomiting is of little value when feeding is withheld. The guides in our case to-day were three: a stage of moderate pain preceding the onset, a continuously high temperature with general irritation, and an increasing swelling.

Before leaving this point let me urge upon you the importance of a few conclusions I have laid down for my guidance and have acted upon for a good many years. First, never to give opium after the initial dose required to relieve pain. More harm is done by prescribing opium every four hours than anything. If the pain continue severe after 24 hours operation will almost invariably be required. Secondly, when in any doubt at all advise operation. Thirdly, on the fourth day remember you ought, if the case be doing well, to be able to handle the swellings fairly freely and all symptoms should be subsiding. It is a dangerous day and if symptoms are progessing operation is the best rule.

Next let us discuss the operation selected in this case. The abdomen was opened by separating the fibres of the abdominal muscles. Abundance of room was obtained in this way. It is the best of all methods and especially in foul abscess. No muscle is divided and hence sutures are not required. The wound heals much more readily and soundly and there is no danger of hernia. I employed it recently in a woman, aged 45 years, where the abscess was chiefly above the iliac crest and where abundance of room could be obtained by separation of muscular fibres. But for most of you this will not give sufficient room. For a beginner I do not recommend this plan in acute conditions where the appendix must be removed. For a localised abscess where the appendix need not be removed, say on the eighth or tenth day, it answers admirably and should be selected in preference to division of the muscle.

There is another route which I strongly recommend you to learn and to practise on the cadaver and which I adopt in all acute cases where the abscess is high up or low down or lies nearer the median line than usual; or again in relapsing cases, where extensive adhesions are expected and the appendix lies probably in the pelvis or near the kidney. I must defer the details to another lecture, but may say here that it consists in cutting through the rectus sheath, dissecting the outer border of the muscle inwards, isolating and preserving the nerves, and then opening the posterior layer of the sheath. The region from the pelvis to the loin can be commanded, no muscle is divided, and no nerve need be destroyed. I owe my knowledge of this admirable proceeding to one of Germany's best surgeons, Professor Körte of Berlin, and consider you should learn this proceeding as carefully as you do that of celotomy, for you must be prepared to operate, and I hope to show you that, given no general peritonitis and no metastatic deposit, appropriate methods need add no additional danger.

The last point is the question of the subphrenic abscess and the mode of dealing with it. A path of direct extension can in most cases be traced upwards from the appendix. In this instance, though no pus was found about the colon, there probably was a track running up in front of the bowel. The pus in the acute cases lies, I believe, most frequently to the right of the falciform ligament of the liver and presents below the ribs, pushing down the liver. Its exact situation is usually determined by an exploring needle inserted in the mid-axillary line. In this case the first punctures were made behind because of the pulmonary signs and a little time was lost.

On account of the coughing and mental excitement no adequate examination could be made before the administration of the chloroform and as the cyanosis was deepening it was thought better to explore freely at once. Pus was found on puncturing the eighth space and a piece of the eighth rib was removed. The danger of pleural infection will occur to you and it must be considered a serious one. The patient's condition at this moment demanded the greatest speed, for the lung was clearly filling with pus, otherwise the diaphragmatic pleura could have been sutured to that of the costal pleura and the cavity shut off. The plan of direct incision was adopted and the diaphragm held against the ribs. This plan has answered in my hands on several occasions and

provided a gauze-covered rubber tube be introduced which will plug the opening and keep the parts in contact the plan will be found a good one. If time permits, as in the last two operations in Job ward, the pleura can be sutured.

Can an abscess in this situation be opened below the ribs in front? Does it project sufficiently far down to be accessible? In this instance an examination of the cavity after incision showed that the abscess could have been evacuated from the front. I have operated from the front but so far prefer the transthoracic route. The subject of subphrenic abscess requires a full investigation and I commend it to any of you in want of a subject for a thesis.

## ON DUODENAL ULCER; WITH NOTES OF 52 OPERATIONS.

BY B. G. A. MOYNIHAN, M.S. LOND., F.R.C.S. ENG.,

SENIOR ASSISTANT SURGEON TO THE LEEDS GENERAL INFIRMARY; CONSULTING SURGEON TO THE SKIPTON HOSPITAL AND TO THE MIRFIELD MEMORIAL HOSPITAL.

IN THE LANCET of Dec. 14th, 1901, p. 1656, I discussed the subject of duodenal ulcer and recorded four cases of chronic ulcer and two cases of perforating ulcer upon which I had operated. During the last three years my experience of this condition has been considerable and I propose in this paper to give a brief record of the cases I have seen and to discuss, at greater length than was possible before, the symptoms and the surgical treatment.

From January, 1900, the date of my first operation, to September, 1904, I had operated upon 51 cases. There were seven cases of perforating duodenal ulcer with five recoveries, 22 operations for duodenal ulcer associated with gastric ulcer with one death, and 23 operations for duodenal ulcer alone with one death. The proportion which these operations bear to the total number of my operations for simple diseases of the stomach may be gathered from the following complete summary of my experience:—

| | Cases. | Deaths. |
|---|---|---|
| Gastro-enterostomy for gastric and duodenal ulcer (including cases of hæmorrhage) ... | 162 | 4 |
| Perforating ulcer of the stomach and duodenum | 20 | 8 |
| Hour-glass stomach ... ... ... ... ... ... ... | 19 | 3 |
| Pyloroplasty ... ... ... ... ... ... ... ... ... | 3 | 0 |
| Finney's operation (gastro-duodenostomy) ... | 2 | 0 |
| Gastroplication ... ... ... ... ... ... ... ... | 1 | 0 |
| Excision of an ulcer for hæmorrhage ... ... | 1 | 1 |

The relative frequency of duodenal ulcer to gastric ulcer has been, therefore, greater in my experience than in many of the statistics which have been published by others. But any discrepancy in this particular is easily accounted for by the fact that the statistics which are quoted in the text-books of medicine are based exclusively upon post-mortem examinations, whereas my investigations have been confined to the living.

Almost all writers remark upon the rarity of ulcer of the duodenum. There can be no doubt, however, that it is by no means so infrequent as is supposed. A series of over 50 operations occurring in the practice of one surgeon disposes entirely of any question as to the great rarity of the disease. The observation of the condition of the gall-bladder and stomach by the surgeon during life has greatly altered our knowledge of the diseases which affect these organs. I submit that duodenal ulcer is far more common than has been formerly believed and that the association of duodenal ulcer with gastric ulcer is frequent. During the last few years a not inconsiderable number of cases have been reported in the medical journals as having been treated surgically on account of perforation, duodenal stenosis, or hæmorrhage. Side by side with the statement as to the infrequency of duodenal ulcer which is contained in most of the text-books of medicine is the remark that the condition is one which is extremely difficult to diagnose. The one observation may explain the other; as a fact, neither statement is accurate.

The symptoms of duodenal ulcer in many cases are perfectly characteristic and admit of an unhesitating diagnosis. I am compelled to dissent very confidently from the statement so often repeated that it is impossible to distinguish between an ulcer of the stomach and an ulcer of the duodenum. Even in those cases in which both gastric and duodenal ulcers are present, when the difficulty of diagnosis might be expected to be at its highest, a careful scrutiny of the history will generally allow a discrimination to be made between the symptoms due to the one and those due to the other condition. I do not pretend to say that in all cases the diagnosis is easy; on the contrary, in some cases it is impossible, because gastric ulcer and gall-bladder disease may both be complications in the same case. In many cases, however, a diagnosis is possible and in some is unmistakeable.

*Position of the ulcer.*—Duodenal ulcers are generally situated in the first portion of the duodenum. Collin found in a series of 282 cases that 242 were placed in the first portion, 14 in the second, three in the third, and three in the fourth. Perry and Shaw found that in 149 cases 123 were situated in the first portion, 16 in the second, and two in the third and fourth; in eight cases the ulcers were scattered. Oppenheimer states that in 81 cases 69 were situated in the first part, eight in the second, and four in the third and fourth. Ulcers in the first portion of the duodenum, then, are at least ten times more frequent than in the second. Schwartz has recorded one case of perforation of an ulcer on a level with, or a little below, the ampulla of Vater. Bile escaped through the opening and was found free in the peritoneal cavity. In my series of cases all the ulcers which perforated were in the first portion of the duodenum; of the chronic ulcers 43 were in the first portion and one was in the second portion.

The ulcers may be multiple though they are usually solitary. If there are many ulcers they are usually crowded together in the first portion of the duodenum, but ulcers in the first portion associated with ulcers in the second or third portion are recorded by Clark, Schwartz, and Dudensing. In one of my cases an ulcer which was on the anterior wall had perforated; immediately opposed to it on the posterior wall was an ulcer of the same size and shape.

The association of gastric and duodenal ulcers had attracted little or no attention before I pointed out its frequency in a paper read before the Clinical Society of London in 1902. In my series of 44 cases there were 22 in which a gastric ulcer or ulcers were also present. W. J. Mayo found gastric ulcer present in over 50 per cent. of his cases. The reason for this association is not difficult to understand. In peptic ulcer of the stomach there is a marked increase in the amount of free hydrochloric acid; when the acid stomach contents escape into the duodenum they cause a peptic ulcer in that part of the wall with which they first come in contact, destroying its mucosa by digestion. The sequence of events then is gastric ulcer, hyperchlorhydria, duodenal ulcer. The shyness of the duodenum to the contact of acids is illustrated in the work of Pawlow.

One important point that has been established by the work of the surgeon upon the stomach is the frequency of multiple ulcers in the stomach or in the duodenum, or in both. In the statistics gathered together in the various text-books of medicine it is shown that gastric ulcer is usually solitary. The reverse is the fact. Gastric ulcer is rarely solitary, there are often more ulcers than one in the stomach, and, as I have said, duodenal ulcer is associated with gastric ulcer in approximately one-half of the cases.

*Age.*—Duodenal ulcer may occur at any age. Oppenheimer has collected the records of 15 cases of melæna neonatorum resulting from ulcer of the duodenum. Chvostek, in a series of 87 post-mortem examinations in children under ten years of age, found ulceration of the duodenum in five; three of the children were aged three hours, four days, and seven weeks respectively. T. D. Lister observed a duodenal ulcer in a child three days old and Spiegelberg one in a child four days old. Landau has suggested that these ulcers are due to emboli carried away from thrombi in the umbilicus. Ulcer of the duodenum in the newly born is also recorded by Henoch, Zerschwitz, and Dusser. Collin in 297 cases of duodenal ulcer found that they occurred as follows:—

| | |
|---|---|
| Under 10 years of age ... ... ... ... ... ... | 42 cases. |
| Between 10 years and 20 years ... ... ... ... | 24 ,, |
| ,, 30 ,, 40 ,, ... ... ... ... | 52 ,, |
| ,, 40 ,, 50 ,, ... ... ... ... | 46 ,, |
| ,, 50 ,, 60 ,, ... ... ... ... | 41 ,, |
| ,, 60 ,, 80 ,, ... ... ... ... | 28 ,, |
| ,, 80 ,, 96 ,, ... ... ... ... | 3 ,, |

In my own cases the ages of the patients in whom perforation occurred were 44, 25, 17, 17, 25, 22, and 40 years. In the remaining cases the ages ranged from 19 to 61 years.

*Sex.*—Duodenal ulcer is usually said to be very much more common in the male than in the female. The ratio given by various writers is as follows: Weir, 6 to 1; Collin, 5 to 1; Cullen, 5·6 to 1; Fenwick, 4 to 1; Perry and Shaw (excluding ulcers due to burns), 6 to 1; and Mayo and Graham, 2·5 to 1. In my 51 cases there were 32 males and 19 females.

*Symptoms.*—The symptoms of duodenal ulcer are pain, hæmatemesis, and melæna. In a certain number of cases (estimated by Morot at 20 per cent.) the ulcer remains latent for long periods and its presence is only revealed by perforation or the occurrence of hæmorrhage. In 151 cases collected by Perry and Shaw in which duodenal ulceration was found post mortem there were 91 in which no history of antecedent symptoms could be obtained.

*Pain* is sometimes slight and does not amount in the earlier stages of the disease to anything more than a vague uneasiness in the epigastrium. The pain is described as being of a burning character at the first and it is felt chiefly in the middle line or along the right costal margin. By degrees the pain becomes more and more severe and may, in certain cases, be so intense as to render the patient entirely unfitted for work. Many patients say that the pain is cramp-like in character and that they receive the impression of something gathering force by slow but inevitable degrees. When severe the pain is always worse to the right of the middle line. In some cases, especially in those where adhesions to the under surface of the liver or to the gall-bladder are subsequently found, there may be a complaint of pain radiating upwards to the right breast. A pain which passes round the chest to the back is sometimes felt.

There can be no question that the time of the onset of pain after food affords valuable information. If the pain does not come on for from two to four hours after a meal then I feel sure that we are entitled to say that the ulcer is either at the pylorus or very near to it. In such circumstances the patient will often complain of what I have been accustomed to call "hunger pain." This pain begins at about 11 or 12 o'clock in the morning if breakfast has been taken at 8 or 9 A.M.; it begins, that is to say, at a time when a patient is beginning ordinarily to feel that another meal is due. In not a few cases the sufferers have discovered for themselves that the taking of food as soon as the "hunger pain" begins will relieve it. A biscuit and a drink of water or of milk will give almost instant relief. As soon, however, as this is digested the pain slowly returns, to be again dispelled by the taking of food. One hears, not rarely, that the patient feels as though he was assured of comfort "if the stomach is working." For this reason a heavy meal will be eaten in order that the onset of pain may be postponed, or food of a particularly "indigestible" character will be taken in order that the stomach may be kept longer at work digesting it. Three of the patients upon whom I have operated have told me that a glass of wine or a little brandy and water has eased the pain for perhaps half an hour. A copious draught of water is not so effective in the removal of the pain as a little solid food. Many of the patients, therefore, do not restrict their diet, at least in the early stages of the disease. On the contrary, they not infrequently eat more than they have been accustomed to and are inclined to boast of their ability to "eat anything." During this period they do not, therefore, lose weight; indeed, they are perhaps sleek and well-conditioned. It is owing to the hyperacidity of the gastric juice that they are able to digest a heavier meal than they have formerly been accustomed to take.

The cause of the pain in duodenal ulcer has not been determined; it may be different in different cases or in the same case at different periods. Among the more likely causes are the irritation of the open ulcer by the acid gastric contents, the degree of acidity and, therefore, of irritation increasing as digestion proceeds; pyloric spasm; distension of the stomach or duodenum or both by gas; and the occurrence of a localised peritonitis. The relief of pain due to the drinking of a little sherry or brandy and water is due, it is suggested, either to the closure of the pylorus, caused by the irritant action of the fluid, or to the dilution of the excess of free hydrochloric acid. The taking of a biscuit or a little solid food certainly gives the hydrochloric acid which is in excess "something to do" and it keeps the stomach at work and postpones the propulsion of the stomach contents through the pylorus for a brief period. In some cases the pain is of a colicky nature and is due almost certainly to a spasm of the pylorus or pyloric antrum. I have seen a patient suffering from an attack of pain which to me (and to him—he was a medical man) was indistinguishable from hepatic colic. In later stages the pain alters somewhat in character. It becomes more severe, more continuous, and less capable of being relieved by food or drugs. It occasionally happens that the taking of solid food causes a great increase of the pain and that the patient for this reason may curtail his diet, live only on milk and other fluids, and thereby determine a marked loss of weight.

In some cases it has been possible to diagnose beforehand, with reasonable certainty, the presence of both gastric and duodenal ulcers in the same patient. The time of the onset of pain is then of great importance. When pain begins very shortly after food is taken, then gradually becomes easier, and again undergoes marked exacerbation, it has been taken as showing that both forms of ulcer are present, that the early pain was due to the irritation of the gastric ulcer, the period of repose to the alteration in the physical characters (bulk, temperature, &c.) of the food, and the exacerbation of pain due to the irritation of the duodenal ulcer.

*Hæmatemesis and melæna.*—These may be present together or either may be present in the absence of the other. It is probable that the passage of blood by the bowel would be found to be more frequent than my statistics show if all cases were carefully examined in the manner suggested by Boas in order to discover traces of blood in the fæces when a quantity not visible to the naked eye is present. Small quantities of blood discharged in vomit are more likely to attract attention than moderate or even large quantities passed in the motions. The disproportion between the frequency of occurrence of hæmatemesis and melæna is, therefore, not truthfully represented by any observations of the kind now to be quoted. In Perry and Shaw's series of 60 cases presenting symptoms hæmatemesis was present in 14 and melæna was present in nine.

Nothnagel considers that severe hæmorrhage—that is, hæmorrhage which is not so insignificant as to pass undiscovered—occurs in one-third of the cases. Fenwick estimates the frequency of hæmorrhage in acute cases at 26 per cent. and in chronic cases at 40 per cent. Oppenheimer found blood in the stools of 50 per cent. of his patients. In my series of 23 cases of duodenal ulcer alone hæmatemesis and melæna were observed in four cases, hæmatemesis alone in three cases, and melæna alone in two cases. In the 21 cases of duodenal ulcer associated with gastric ulcer, hæmatemesis and melæna were present in six cases, hæmatemesis alone in four cases, and melæna alone in three cases.

The amount of blood lost is sometimes considerable. Faintness has occurred in two of my patients, and one patient, in whom the hæmorrhage was so severe that I operated to check it, fainted as he was lifted on to the operation table. In such cases the intestine may be found to be full of blood when the abdomen is opened; the colon I have seen fully distended with blood which showed through the walls a vivid deep-blue colour. Hæmorrhage from a duodenal ulcer is certainly more persistent and probably less easy to check than hæmorrhage from a gastric ulcer. It is undoubtedly more insidious, for I have seen patients blanched and breathless from loss of blood who have never suspected that their "indigestion" was in any way connected with the cause of their condition. Other signs and symptoms may appear later, due to the changes which occur in the duodenum and stomach as a result of the induration or puckering of the ulcer. These are precisely the same as those which are caused by stenosis of the pylorus and need not be discussed in this connexion.

*The complications of duodenal ulcer.*—These are: (1) hæmorrhage; (2) perforation, acute, subacute, and chronic; (3) cicatricial contraction and induration, causing stenosis of the duodenum; (4) cicatricial contraction, causing narrowing at the ampulla of Vater and obstruction to the outflow of bile and pancreatic juice; (5) periduodenitis; (6) cancer; (7) compression of the portal vein from cicatrisation of a deeply placed ulcer (French); (8) diseases of the gall-bladder or bile-ducts; and (9) diseases of the pancreas.

1. *Hæmorrhage.*—Any of the vessels in or near the duodenum may be opened by the deepening of the ulcer. The following among the larger vessels have been perforated: aorta (Stich, Grünfeld), hepatic (Broussais), gastro-duodenal (Leeds Museum), superior pancreatico-duodenal (Allchin, Wunderlich), and the pyloric, pancreatica magna, and gastro-epiploica dextra, and into the vena porta (Rayer and Habershon) and the superior mesenteric vein (Warfwinge). The surgical treatment of hæmorrhage in copious quantity

from a duodenal ulcer is the surest means of arresting it. As soon as there is evidence that the hæmorrhage is persisting there is urgent need for surgical measures. The indication to operate is in my judgment more imperative than it is in cases of gastric ulcer, for the bleeding more often implicates larger vessels and is less likely to cease spontaneously. In all my cases I have performed gastro-enterostomy alone and have not removed or sutured the ulcer; in all cases the hæmorrhage has ceased at once. There are cases, however, in which I think that an excision of the ulcer if easily accomplished would be desirable, and there may be cases where the ligature of a large vessel in the ulcer would be necessary. In some cases closure of the pylorus by infolding sutures may be practised. In many instances, however, removal of the ulcer would be impossible and in the great majority it probably is neither necessary nor desirable. Gastro-enterostomy in all cases is the operation of choice; and it must be performed whether the ulcer is treated separately or not in order to give rest to the duodenum.

2. *Perforation.*—The frequency of perforation in duodenal ulcer is given by Collin as 69 per cent. and by Chvostek as 43 per cent. It is generally stated that perforation is more likely to occur in duodenal ulcer than in gastric ulcer, and that having occurred its consequences are more disastrous. Pagenstecher estimated the mortality of perforation at 86 per cent. In my former paper I collected notes of 51 cases of perforation treated by operation with eight recoveries. My present list embraces a series of seven cases upon which I have operated, with five recoveries. The remarkable mimicry of appendicitis, to which I called attention, has been confirmed by the observation of other writers. It is due, as I have shown, to the direction which the extravasated fluid takes—down the hillock to the right of the transverse mesocolon, down the ascending colon to the iliac fossa. In my series of 51 cases no fewer than 19 had been operated upon after an erroneous diagnosis of appendicitis had been made. When chronic or subacute perforation occurs an abscess may form. Meunier describes a local abscess in his case as being bounded by the quadrate lobe of the liver, the gall-bladder, and the transverse mesocolon. Lennander relates a case where an abscess was hemmed in on all sides by intestine. The perforation of such an abscess may lead to acute septic generalised peritonitis, as recorded by Planchard. Perforation of the upper portion of the duodenum may lead to subphrenic abscess. Seven cases of this kind are related in Maydl's monograph. An ulcer may destroy all the coats of the bowel and its base be formed by the liver (Keyl, Herzfelder, Collin) or by the gall-bladder (Krauss, Moynihan). An ulcer may destroy all the coats of the bowel and perforate a hollow viscus forming an "internal duodenal fistula." Rokitansky describes a case of gastro-duodenal fistula; Hoffmann and Gross cases of cholecysto-duodenal fistulæ; Murchison, West, and Sanderson cases of duodeno-colic fistulæ; and Dudensing a case where the ulcer had perforated the pancreatic duct. An ulcer may destroy all the coats and lead to the formation of an abscess which bursts upon the surface of the body, forming an "external duodenal fistula," as recorded by Lumeau and Bucquoy. The duodenal wall may be ulcerated through by an abscess arising from without, as in a case of lumbar abscess bursting into the duodenum close to the biliary papilla, under the care of Davies-Colley.

3, 4, 5, 6, and 7 have been considered at length in my former paper; I have nothing to add to the detailed descriptions given therein.

8. *Diseases of the gall-bladder and bile ducts.*—The associated conditions of pancreatic and gall-bladder disease are of great interest. In ten cases in my series there was obvious evidence of disease in the gall-bladder or bile-ducts, with or without gall-stones. I have in some cases performed gastro-enterostomy and cholecystotomy or cholecystectomy. From one patient I removed 1885 gall-stones. The disease in the duodenum may be primary and that in the gall-bladder secondary, or that in the gall-bladder may be primary and that in the duodenum secondary, or the two may be entirely independent. Duodenal ulcer may dispose to the formation of gall-stones by giving rise to peritonitis. As a result of this there is stasis of bile and perhaps infection—the two conditions which we know to be essential to the development of gall-stones. On the other hand, a condition of cholecystitis, whether calculous or not, may cause disease in the duodenum in a manner well illustrated by one of my cases. The gall-bladder had contained a single large stone which had ulcerated through into the duodenum, which it blocked. The duodenum, gall-bladder, and stone were massed into one dense tumour which both felt and looked very like a malignant growth. The "gritty" surface which I have long felt to be an invariable accompaniment of malignant disease was not present and a closer investigation of the lump was made and the condition I have described was revealed. The symptoms and the signs of duodenal ulcer are in some cases not easy to distinguish from those which are due to cholelithiasis. The pain in both may be colicky or it may be persistent; the direction in which the radiation extends may be similar; there is in both conditions, as Ewald has shown, an excess of free hydrochloric acid. The discrimination between the two may, therefore, not always be possible, but in the cases, as I have seen them, there has been little or no difficulty in making a correct diagnosis. Happily in both cases surgical treatment offers the speediest and safest relief.

9. *Diseases of the pancreas.*—The association of disease of the pancreas with duodenal ulcer has not received attention. It was present in three of my cases. A duodenal ulcer may in its gradual deepening destroy all the coats of the bowel until the pancreas is reached. The base of the ulcer is then formed by the pancreas which is implicated in the inflammatory process. A localised chronic pancreatitis results, or if the inflammatory process be more acute an abscess may form. A condition of chronic pancreatitis may be present in cases of duodenal ulcer and be caused by the same condition as gave rise to the ulcer—alcohol for example, or perhaps syphilis.

The following is a brief extract from the notes of the cases upon which I have operated. The cases are arranged in three series: Series 1 includes the cases of perforating ulcer; Series 2 includes the cases of duodenal ulcer; and Series 3 includes the cases of associated gastric and duodenal ulcers.

SERIES 1.—*Perforating Duodenal Ulcer (Seven Cases).*

| | | | |
|---|---|---|---|
| Males ... ... ... ... ... ... | 4 | Deaths ... ... ... ... ... ... | 2 |
| Females ... ... ... ... ... ... | 3 | Recoveries ... ... ... ... ... | 5 |

CASE 1.—April 26th, 1900; male, aged 44 years. Symptoms had been present for 18 months; the chief of them was pain two, three, or four hours after food. Blood had been observed when the patient vomited; vomiting was frequent but irregular. There was no melæna. On the 25th while in the infirmary the man became suddenly worse; pain came on acutely in the whole abdomen. Distension and rigidity were soon observed. Collapse was pronounced. The respirations were 28 and the pulse was 128. A diagnosis of perforating ulcer was made and the abdomen was opened. The ulcer was found at the beginning of the second part of the duodenum; its diameter was about three-quarters of an inch. After stitching the ulcer up the gut seemed narrowed to at least half its diameter. A gastro-enterostomy, with the aid of a Murphy's button, was therefore performed. The patient never rallied from his collapse. Time of operation after perforation about 26 hours.

CASE 2.—June 18th, 1901; male, aged 25 years. The patient, a sturdy robust labourer, stated that for about four weeks before admission he had suffered from indigestion and vomiting. On the 18th, while climbing a ladder he was suddenly seized with intense abdominal pain. He was seen at once by a medical man who happened to be near and was sent to the infirmary. He was then profoundly collapsed. Breathing was quick and short; his pulse was 128; the abdomen was rigid and unyielding. A diagnosis of perforated ulcer was made. At the operation a perforation equal in diameter to a No. 8 or 9 catheter was found in the duodenum one inch from the pylorus. The ulcer was stitched and the abdomen was cleansed and drained. The patient recovered. Time of operation after perforation 3 hours 50 minutes.

CASE 3.—April 20th, 1902; female, aged 17 years. For several weeks she had had slight indigestion and epigastric pain but not in sufficient severity to send her to a medical man. On the night of April 19th at 9 P.M. she had a sudden attack of acute epigastric pain. Morphine was given. She was seen at 7 A.M.; the abdomen was very rigid and rather tender, especially over the gall-bladder. She had vomited once. The pulse was 112. Respiration was very shallow. At the operation an ulcer was found to have perforated on the anterior surface of the duodenum, about three-quarters of an inch from the pylorus. There was some fluid above the stomach. The ulcer was closed by suture and the peritoneum was cleansed by wiping with swabs wet with sterile salt solution. There were no lavage and no drainage. The patient recovered. Time of operation after perforation about ten hours.

CASE 4.—Dec. 27th, 1903; female, aged 17 years. She had always been pale and anæmic and for 12 months had complained of indigestion and occasional vomiting. Illness commenced suddenly four days before admission with pain in the right side and across the abdomen. There was vomiting. At the operation perforated duodenal ulcer was found. An incision was made in the right flank; offensive pus was found. Tubes were inserted. The patient recovered and is now in sound health. (A case of subacute perforation.)

CASE 5.—March 24th, 1904; female, aged 25 years. She had had indigestion for 12 years. For many years she had had acid eructations and for the last two years had vomited after food. She had had many severe attacks of pain in the epigastrium. Four days prior to admission and again one day before she had attacks but not any more acute than many she had had previously. During the last three years her weight

had dropped from 9 stones to 5 stones 8½ pounds. At the operation there was found to be a perforation of the size of a small pea in the upper part of the first portion of the duodenum. The ulcer was of about the size of a half-crown. There was a little local plastic peritonitis but no general infection. The perforation was closed by Lembert's sutures and a posterior gastro-enterostomy was performed. The patient recovered.

CASE 6.—May 11th, 1904; male, aged 22 years. He had been quite healthy up to the beginning of April, 1904, when he felt a slight pain in the abdomen. This only lasted a few minutes and then passed off. Three weeks later he was seized with extremely acute abdominal pain. Within three minutes he was in a state of complete collapse. The pain was most severe in the epigastric region at first, later it was most acute in the lower part, and in two or three days it settled in the right iliac region. He vomited at the beginning, not again later. There was slight constipation. He recovered very rapidly and went out for a stroll on the ninth day. On symptoms of a similar kind again coming on operation was advised. At the operation an incision was made over the appendix. The appendix was found lying along the outer side of the ascending colon and adherent in all its length. It was removed. The hand passed up into the liver region felt numerous adhesions. A second incision was made over the gall-bladder. Numerous adhesions of the gall-bladder to the liver and the duodenum were separated, also a very strong one between the duodenum and the under surface of the liver. On examining the surface of the duodenum thus bared a minute perforation was seen. This was occluded by Lembert's sutures and the abdomen was closed. The patient recovered.

CASE 7.—Sept. 9th, 1904 (6 P.M.); male, aged 40 years. The patient was admitted into the Leeds General Infirmary with a history of having had a large barrel fall on the left side of his abdomen just below the umbilicus about two hours previously. The following history was obtained from the wife (subsequently to the operation). He had been in poor health for some time back, having been under the care of a medical man on and off for the past year. For the last two years he had suffered considerably from pain in the upper part of the body coming on soon after taking food. Medical treatment had never done this any permanent good. He vomited occasionally. In the previous week he vomited blood once; the amount was not known. No history was obtainable pointing to melæna. On admission he had a great deal of pain on the left side of the abdomen. There was little evidence of collapse. The pulse was 88 and the respirations were quiet and not shallow. There were great tenderness of the left side of the abdomen and rigidity; there was little movement on this side; also dulness over the area of the left external oblique and left iliac fossa. Liver dulness was present. During the night he vomited once and next morning he was not so well. The breathing was more hurried and shallow; the pulse was 100. The abdomen was a little more distended. There were tenderness and dulness as before. On the 11th his general condition improved; the pulse was 90. The pain and tenderness had wholly disappeared. There was more distension of the abdomen. Movement was fairly good. The dulness on the left side was now limited to the loin; this disappeared on rolling him on to his right side. On the 12th his general condition was still remarkably good. The pulse was quiet, under 100. He was entirely free from pain and took a fair quantity of milk by the mouth. Abdominal distension was still considerable. The abdomen was very hard and resistant; there was no tenderness. Liver dulness was present. There was no dulness on either loin. During the afternoon he became markedly worse. He rapidly became extremely collapsed, pale, cold, and sweating. The pulse was weak and intermittent. The abdomen was still more resistant and distended so that it felt almost like a tightly blown football. Vomiting occurred twice during the afternoon. Laparotomy was performed at 6 P.M. (median incision). A large quantity of free, odourless gas was found in the peritoneum. There was general suppurative peritonitis. The pelvis was full of pus and there was flaky lymph over the intestines. In the anterior wall of the first part of the duodenum an aperture of the size of a large quill was found. This was closed by sutures and sequestrated by stitching that surface of the duodenum to the stomach wall. Free drainage was made through both loins and from the pelvis. The patient died 11 hours after, despite infusion (twice) and the usual stimulants. Post mortem an ulcer on the posterior wall of the duodenum, just beyond the pylorus, was found. It was an ulcer on the anterior wall which had perforated.

## SERIES II.—*Duodenal Ulcer (22 cases).*

| | | | |
|---|---|---|---|
| Males ... ... ... ... ... ... | 14 | Hæmatemesis and melæna ... | 4 |
| Females ... ... ... ... ... | 8 | Hæmatemesis alone ... ... ... | 3 |
| (There was 1 death.) | | Melæna alone ... ... ... ... ... | 2 |

CASE 1.—August 7th, 1902; male, aged 31 years. There was a ten months' history of pain after food and gradual loss of weight. All solid food had been abandoned little by little and now a fluid diet caused pain, occasional vomiting in large quantity, and distension. He had twice had hæmatemesis. The pain was frequently felt about from one and a half to two hours after food; it was slight at first but gradually increased in intensity. It was always relieved by a meal or by taking small quantities of biscuit. He was often wakened at 2 or 3 o'clock in the morning by the pain. He had sour and bitter eructations. He had lost exactly 4 stones in the last 19 weeks. He had a very dilated stomach. Free hydrochloric acid was present in excess. At the operation, while lying under the anæsthetic on the table, the dilated stomach showed prominently. It descended a hand's breadth below the umbilicus. On opening the abdomen a thickening of the duodenum above the bile papilla was felt; the first portion of the duodenum and the stomach were very markedly dilated. Posterior gastro-enterostomy was performed. The patient made a good recovery, eating solid food before leaving hospital. He has had occasional fulness after meals and slight pain but has eaten heartily and gained 12½ pounds in weight. On Oct. 20th he had gained 1 stone and on Dec. 8th was "feeling stronger."

CASE 2.—Sept. 24th, 1902; male, aged 32 years. On April 9th of this year the patient was suddenly seized with an acute attack of pain in the right hypochondrium. He vomited frequently and some blood was noticed. The attack lasted two hours and subsequently the motions were seen to be tarry. Since then he had suffered almost constantly from flatulent distension of the abdomen, especially after food. On several occasions he had had very severe attacks of pain in the right hypochondrium lasting one or two hours and "doubling him up." Each attack had been followed by profuse tarry stools and on two occasions had been accompanied by hæmatemesis. The pain was chiefly situated above, and to the right of, the umbilicus; the painful spot could be covered by a finger-tip. There had never been jaundice. He had lost three and a half stones in weight since February. The stomach was a little dilated. Free hydrochloric acid was in excess. At the operation a duodenal ulcer occupying the first and second portions of the duodenum was found. It was of about the size of a walnut, very thick and adherent to the pancreas. Posterior gastro-enterostomy was performed. The gall-bladder was found to be choke-full of stones. These were removed and a few stones from the hepatic duct were easily squeezed along the cystic duct into the gall-bladder. The latter was drained. The stones numbered 1885. The patient recovered. In May, 1904, he was reported to be perfectly well.

CASE 3.—Sept. 25th, 1902; female, aged 60 years. She had been failing in health for from nine to ten months. The chief symptom had been vomiting. At the onset she had a sudden seizure of vomiting, very acute and lasting over 24 hours. There had been a series of attacks of vomiting. Pain was noticed about an hour before a meal was due and lasted from a few minutes to two or three hours; it was never very severe. She had lost flesh and had got weaker, occasionally having to spend a part of the day in bed. There was no melæna or hæmatemesis. A small, hard tumour was felt above, and to the right of, the umbilicus, a little moveable. On distension with $CO_2$ she had an enormous stomach, reaching a full hand's breadth below the umbilicus. At the operation a very large stomach was found. In the second portion of the duodenum the tumour was found. It was a mass of about the size of a large walnut, adherent to the pancreas, with which it seemed inseparably connected. The duodenum above this point looked distended—probably chronic duodenal ulcer with interstitial pancreatitis. The patient recovered. In January, 1903, she was eating heartily and was free from all discomforts. In December, 1903, she was in good health.

CASE 4.—Oct. 4th, 1902; male, aged 29 years. He had suffered for several years from a "weak stomach," having pain after food, two or three hours after, and occasionally vomiting. He was in his usual state of health up to August 31st last. On that day he had a long and tiring bicycle ride which left him weary. On Sunday he ate heavily and had much discomfort. On Sunday night he got out of bed owing to the feeling of fulness in the stomach and the great uneasiness. He induced vomiting and the bowels were then moved. He felt faint and cold. On Monday he was feeling very tired so did not get up; he was still ill and weakly on Wednesday. The stools on both days were quite black. On Wednesday he fainted once while in bed and felt very chilled. On Thursday the bowels were opened four times and large tarry stools passed. On Tuesday he was noticed to be very pale; his pallor increased on Wednesday very decidedly. On Thursday morning he was seriously ill. The pulse was 122; he was very blanched; felt "dead tired"; and the bowels were moving frequently and on all occasions blood was coming. When seen he looked desperately ill. His face and mucous membrane of the mouth were blanched to the last degree. Chronic duodenal ulcer, with acute deepening and the opening of some large vessel, was diagnosed. Operation was advised as a last resort. On opening the abdomen the stomach was found to be very dilated and full of gas; it contained no blood. The first portion of the duodenum was also dilated. About one inch from the pylorus a dense hard mass equal in size to a walnut was felt adherent to the pancreas. Excision of this ulcer was impossible and therefore gastro-enterostomy was performed. The jejunum at the point opened contained brownish altered blood. The transverse colon was a most vivid dark-blue in colour and full of blood. The patient recovered. He was in a most critical condition and very blanched. While being lifted on to the operation table he complained of being tired and cold and then fainted. He has been quite well since the operation.

CASE 5.—Dec. 9th, 1902; female, aged 17 years. In April of this year she had an operation performed for perforation of a duodenal ulcer. For the first two months all went well but she was never able to take full diet freely. During the last two months the stomach had been very irritable; only fluids had been taken. Pain and discomfort after food had gradually increased. The stomach was dilated, especially toward the cardiac end. At the operation innumerable adhesions were found. The posterior surface of the stomach could not be reached on account of adhesions of omentum, transverse colon, &c., nor could the duodeno-jejunal flexure be reached. The cæcum was, therefore, found and the ileum traced upward from it to the highest point of the jejunum free from adhesions. A Roux's operation was then performed to the anterior surface of the stomach. The cæcum and colon were contained in a mesentery common to them and to the small intestine. The patient recovered. By March, 1903, she had gained 11 pounds in weight. In June, 1904, she was perfectly well, eating ordinary meals, and was nearly two stones heavier.

CASE 6.—April 19th, 1903; male, aged 27 years. The patient had had symptoms for five or six years. He had indigestion. After food he had a feeling of weight and oppression in the epigastrium, "rifting," and sour eructations. He often felt the food "working about in the stomach." He had very little appetite. He had occasionally had a period during which an intense burning pain had been felt two or three hours after a meal. During the last five years he had lost one and a half stones. During the last six months he had had great discomfort, almost preventing him from doing his work. The stomach was dilated but no traces of peristalsis were seen. At the operation a dilated stomach was found. There was a duodenal ulcer equal in size to a sixpence. Posterior gastro-enterostomy was performed. The patient recovered. He had a severe attack of bronchitis after the operation, with high temperature and rapid pulse.

CASE 7.—June 23rd, 1903; male, aged 31 years. He had been suffering from "indigestion" for two or three years. He now had pain and burning in the epigastrium. The pain was eased by food. He became "blown up" about an hour after a meal and belched very bitter fluids. About three hours after a meal he began to feel a sinking sensation which was eased by gentle pressure of the hand over the epigastrium. There were pain and tenderness to the right of the middle line. The stomach was slightly enlarged. Gastric hyperchlorhydria was present. At the operation a duodenal ulcer about one-third of an inch in diameter with opaque surface and hard puckered base, just beyond the pylorus, was found. Posterior gastro-enterostomy was performed. The patient recovered. (Dr. Kammerer

and Dr. Brewer of New York were present.) The result of the operation has been perfectly satisfactory.

CASE 8.—July 14th, 1903; male, aged 42 years. For many years he had had indigestion. He had pain, burning, and fulness after meals. The pain came on about two hours after a meal and lasted till the next meal, when he was easy for a time. The pain went round the right side of the abdomen and through to the back. He had recently become much worse and had a heavy, burning feeling in the pit of the stomach. He could not eat with comfort. There was no vomiting. He was very tender in the right of the epigastrium. At the operation a duodenal ulcer was found just beyond the pylorus. There was a circular reddened and slightly puckered indurated area. There were a few adhesions on the posterior surface of the stomach. Posterior gastro-enterostomy was performed. The patient recovered and has since been perfectly well and able to eat ordinary meals heartily. He has gained one and a half stones in weight.

CASE 9.—August 7th, 1903; male, aged 39 years. Some years ago the patient had five or six attacks of severe abdominal pain with fainting. The last of these was four years ago. Since then he had suffered a good deal from indigestion, pain from two to four hours after food, sometimes earlier than this, though not usually. He suffered much from flatulent distension after a meal and had very sour eructations. On July 27th, 1903, he had another similar attack of pain and nearly fainted. The pain passed off in about half an hour. On August 1st his motions were quite black; he felt quite well. On the 8th while cycling home from business he felt faint and got off his bicycle. He vomited a large quantity of blood. On reaching home he collapsed. Next day he again vomited blood and had several black stools. He was anæmic and his pulse was 120. At the operation an ulcer was found on the posterior wall of the second part of the duodenum, adherent to the pancreas. Posterior gastro enterostomy was performed. The patient was severely collapsed after operation but he recovered. The result of operation was perfect. In June, 1904, he was quite well.

CASE 10.—Nov. 23rd, 1903; male, aged 30 years. The patient was quite well up to 18 months ago, when he had an attack of pain below, and to the right of, the umbilicus, accompanied by vomiting. These symptoms had continued at intervals up to now; latterly he had only vomited at night or in the early morning. The pain came on as a rule about one and a half hours after a meal; during this hour or more he was more comfortable than at any other time. The heavier the meal the longer his freedom from pain. Dieting did not improve the condition at all. No hæmatemesis or melæna had been noticed although looked for recently. At the operation there was found to be thickening and puckering of an old ulcer in the first part of the duodenum. Posterior gastro-enterostomy was performed. The patient recovered and has since been perfectly well. He eats heartily and has no discomforts.

CASE 11.—Dec. 2nd, 1903; female, aged 45 years. The patient had pain after food and occasional vomiting for ten years. She was much worse the last three months. She had lost one stone in weight during the last eight months. Examination of stomach contents after test meals showed absence of free hydrochloric acid and presence of lactic acid. At the operation a thickened band was found across the front of the first part of the duodenum. There were many adhesions of omentum to the anterior wall of the abdomen. Posterior gastro-enterostomy was performed. The patient recovered.

CASE 12.—Dec. 3rd, 1903; female, aged 38 years. The patient had had symptoms on and off for ten years; they had been worse of late. There were vomiting, pain in the left side, and nausea. The pain was always present but worse after food. Vomiting made the pain worse. The patient said that she had vomited a little blood sometimes. The bowels were constipated. There was loss of weight. She now weighed 5 stones 4½ pounds. There were frequent vomiting and tenderness over the left hypochondrium. Free hydrochloric acid was in excess in the stomach contents after test meals. The urine was acid, of specific gravity 1018; albumin was present but no sugar. At the operation nothing abnormal was found. There were no scars. Posterior gastro-enterostomy was performed. The patient developed hæmaturia and uræmic symptoms and died on the 8th.

*Necropsy.*—There was no peritonitis and union was quite sound. "Kidneys are small and present cysts on their surfaces. The capsule does not strip readily, being adherent in some places. On passing the finger over the surface of the kidney a distinctly granular impression is imparted to it. The cortex is extremely narrow, almost all the kidney substance being made up of the pyramids. The pelves appear normal." There was ulceration without induration in the duodenum, probably uræmic in origin.

CASE 13.—Jan. 15th, 1904; male, aged 32 years. Symptoms had been present for three or four years. There was pain at first during a meal, later an hour or so after food. For 18 months there had been vomiting. The loss of weight amounted to one and a half stones. There was no hæmatemesis. At the operation there were adhesions of the pylorus and the duodenum to the gall-bladder. The duodenum was dilated. Posterior gastro-enterostomy was performed. The patient recovered.

CASE 14.—Jan. 20th, 1904; male, aged 40 years. The patient had suffered from pain in the epigastrium for 18 years. During the last three years this had been worse and he had had occasional attacks of vomiting. For six months the pain had been very severe. There had been a feeling of heat and oppressiveness in the epigastrium and there were constant belching and regurgitation of food. He had lost 14 pounds in weight during that time. No free hydrochloric acid was present. At the operation a duodenal ulcer of the size of a threepenny-piece was found just beyond the pylorus. Posterior gastro-enterostomy was performed. The patient recovered. After the operation he could take food well but there were still a good deal of flatulence and distension of the abdomen.

CASE 15.—March 24th, 1904; female, aged 25 years. The patient had had indigestion for 12 years. For many years she had had acid eructations, distension, and for the last two years had vomited after food. She had had many severe attacks of pain in the epigastrium, beginning, as a rule, an hour or two after food. Four days before admission, and again one day before, she had attacks, but not any more acute than many she had had before. During the last three years her weight had dropped from 9 stones to 5 stones 8½ pounds. At the operation perforation of the size of a small pea was found in the upper part of the first portion of the duodenum. The ulcer, with the induration around it, was of about the size of a half-crown. There was a little local plastic peritonitis but no general infection. The perforation was closed with Lembert's sutures and a posterior gastro-enterostomy was performed. The patient recovered. Since the operation she had eaten better than ever before and had gained about three stones in weight.

CASE 16.—June 17th, 1904; male, aged 40 years. The patient had suffered from indigestion for 20 years. 12 months previously he had a sudden attack of faintness, followed by anæmia and great general feebleness. He noticed that the motions were black for some days after the attack. There was no hæmatemesis. Six months previously a recurrence of these symptoms and commencing dilatation of the stomach were noticed by Dr. R. H. Trotter. Two similar attacks had since been noticed; in the last there was "profuse hæmorrhage." Great tenderness was present along the costal margin on the right side down to the umbilicus. There was some dilatation of the stomach. The pain generally came on from one to one and a half hours after food. At the operation a large duodenal ulcer was found about three-quarters of an inch beyond the pylorus. There were much thickening and opacity around it. Posterior gastro-enterostomy was performed. The patient recovered and since the operation had been quite well.

CASE 17.—June 17th, 1904; male, aged 40 years. The patient had had stomach trouble over 20 years, flatulence and pain coming on from one to one and a half hours after food. At Easter, 1902, he noticed that the fæces were black and he once vomited blood. Ten days before he vomited a very large quantity of blood—about "half a bucketful." At the operation there was well-marked thickening in the anterior wall of the first part of the duodenum, with adhesions to its surface. Posterior gastro-enterostomy was performed. The patient recovered and his medical man reports that he has made remarkable progress since the operation.

CASE 18.—July 16th, 1904; female, aged 26 years. For three years the patient had suffered from pain in the epigastrium and between the shoulders. This came on almost immediately after taking food and was very often followed by vomiting which relieved the pain. There were always a feeling of great fulness and oppression and a burning pain in the pit of the stomach after meals. There had been slight hæmatemesis on three or four occasions. At the operation a somewhat dilated stomach was found. There was a cicatrix on the anterior wall of the first part of the duodenum about a quarter of an inch beyond the pylorus. No obvious stenosis was present. There were adhesions to the under surface of the liver. Posterior gastro-enterostomy was performed. The patient recovered.

CASE 19.—August 4th, 1904; male, aged 55 years. The patient had been subject to occasional attacks of pain for several years. The pain was very definitely localised over the upper part of the right rectus. It came on at night and lasted two or three hours. He rarely vomited. He had occasionally been slightly jaundiced. While in hospital he passed a considerable quantity of altered blood per rectum. He was very thin, anæmic, and prematurely aged. At the operation a mass of indurated tissue of about the size of a hen's egg was found involving the first part of the duodenum. It was considered to be an ulcer with surrounding inflammatory thickening. Posterior gastro-enterostomy was performed. The colon was quite blue in colour from contained blood. The patient recovered.

CASE 20.—August 17th, 1904; male, aged 52 years. The patient had been ailing for about 12 months severely but slightly for nearly three years. He first noticed pain in the stomach on waking at 2 or 3 o'clock in the morning; he would then vomit "nasty sour stuff." The pain had since increased very much and was now all to the right of the middle line, where there was tenderness. The pain came on from one to three hours after food. "Heaving," retching, and foul eructations were present. He had several attacks of severe vomiting but never of hæmatemesis. The stomach was large but there was no visible peristalsis. At the operation a duodenal ulcer was found. There were many adhesions of the stomach, duodenum, and omentum to the anterior abdominal wall high up. Posterior gastro-enterostomy was performed. The adhesions were not separated. The patient recovered.

CASE 21.—Sept. 2nd, 1904; female, aged 44 years. There was an indefinite history of an attack of abdominal pain after confinement about 11 years previously. The patient was in her usual health at the beginning of this year, though occasionally she had had attacks of dizziness and abdominal pain. In January, 1904, she began to feel pain after food. Soon vomiting began which relieved the pain. The vomit was very offensive. She had lost about two stones in weight. Free hydrochloric acid was present in the stomach contents. The stomach was much dilated and greatly hypertrophied. Contractions were constantly seen. At the operation the stomach was found to be much dilated. There were extensive adhesions between the pylorus, the gall-bladder, and the lower margin of the liver. Gall-stones were felt in the gall-bladder. Posterior gastro-enterostomy was performed; then the adhesions between the liver and the first part of the duodenum were separated. The gall-bladder was intimately adherent to the duodenum. In separating this the duodenum was opened. A gall-stone of about the size of a pigeon's egg was found projecting into the duodenum but covered completely, or almost completely, by duodenal mucosa. The wound in the duodenum was sequestrated by suture. The gall-bladder, which contained another stone, was small and shrunken; it was removed. A drainage-tube was left in the cystic duct. A split tube with a gauze wick was left in the kidney pouch. The patient recovered.

CASE 22.—Sept. 3rd, 1904; female, aged 40 years. The patient was confined 11 weeks previously. Three weeks after labour she began to feel very weak and languid and one day she noticed that her motions were quite black. They continued to be so for eight or ten days. She had only vomited once, the vomit, according to her medical attendant, containing about one ounce of blood. She had never had any pain in the abdomen but she had been unable to take solid food on account of its bringing on palpitation. At the operation an ulcer was felt in the first part of the duodenum. The stomach was a little dilated. Posterior gastro-enterostomy was performed.

## SERIES III.—*Gastric and Duodenal Ulcers (22 patients: 23 operations).*

| | | | |
|---|---|---|---|
| Females ... ... ... ... ... ... | 8 | Hæmatemesis and melæna | 6 cases. |
| Males ... ... ... ... ... ... | 13 | Hæmatemesis alone ... | 4 " |
| (There was one death.) | | Melæna alone ... ... ... | 3 " |

CASE 1.—January, 1900; female, aged 41 years. At the age of 16 years the patient had an illness attended with vomiting of blood, on one occasion in large quantity. She had had pain after food ever

since; at times she was better and at times worse. The diet had been carefully and rigidly supervised. In June, 1899, the pain began to be much more acute and vomiting which before had been inconstant now became frequent. Large quantities (four pints) were vomited. On examination of the abdomen a large contracting stomach was seen. Nothing abnormal was felt over the pylorus. At the operation the condition found was thickening at the pylorus and along the first portion of the duodenum, with contraction and many adhesions to the gall-bladder. The adhesions were carefully broken down. Gastro-enterostomy was performed with the aid of Laplace's forceps, the operation being very simple and speedy. The patient recovered and was quite restored to health. She could eat well and suffered no pain. When seen on July 29th, 1902, she was quite well—in "first-rate health." She was quite well in June, 1904.

CASE 2.—January, 1903; male, aged 55 years. The patient had had dyspepsia for ten or 12 years, culminating five years ago in an "attack" which lasted for two weeks and was remarkable for the severity and continuance of epigastric pain and the persistence of vomiting. Since this attack he had had periodic seizures of copious vomiting at intervals of from 24 hours to three weeks. He had pain after food at intervals of from three to six hours, varying greatly in severity but generally not amounting to more than discomfort. On one occasion in hospital the vomited matter measured five and a half pints. The stomach was huge and flabby but contractions were always visible. Hydrochloric acid was present. At the operation the condition found was an enormous stomach. When distended with two seidlitz powders the outline of the greater curvature descended behind the symphysis pubis. An ulcer was found extending onward into the duodenum; cicatricial contraction was very marked; there was adhesion to the liver. Gastro-enterostomy was performed by the aid of Laplace's forceps, together with separation of old adhesions. The patient recovered. In August, 1902, he reported himself "as well as ever he was in his life and able to eat anything."

CASE 3.—March, 1900. This patient returned to hospital. After the operation there was considerable relief for about a month. Then, after a heavy meal, consisting largely of boiled peas, there was an attack of pain and vomiting and from that date the symptoms gradually returned. On admission his condition was practically the same as before operation. The abdomen was again opened and a second gastro-enterostomy, with the aid of Murphy's button, was performed. The opening made at the first operation, between the stomach and the intestine, was practically closed. The patient made a good recovery. When seen in September, 1900, he said that he was "never better in his life, had gained over two stones in weight, and had no gastric anxieties or discomforts."

CASE 4.—Feb. 16th, 1901; female, aged 51 years. For some years the patient had had pain after food and diarrhœa. For the last five or six months the pain had been much more severe after every meal. It came on about half an hour after food and lasted for three hours or more. Vomiting was infrequent unless self-induced to obtain ease. On two occasions she had noticed blood but only in small quantities. She had lost health and strength and had become thin. Continuous treatment for five months had proved unavailing. There was tenderness on pressure over the pylorus. Her medical attendant writes: "Had tried all the usual drugs, without relief, that nothing could be taken without great pain, and she was losing flesh and strength." The stomach was a little dilated; there was excess of hydrochloric acid. At the operation three ulcers were found. Two were in the stomach near the lesser curvature, one about an inch from the pylorus and the second two and a half inches, and one in the first part of the duodenum, with considerable induration. Posterior gastro-enterostomy by simple suture was performed. The patient made a good recovery. When seen three months after the operation she had gained ten pounds in weight. 12 months later she was in good health.

CASE 5.—March 19th, 1901; male, aged 30 years. Symptoms had been present for five or six years. He had had pain in the epigastrium after meals, most severe in bed at night, and slight pain between the shoulders. Vomiting had been present for 12 months, almost regularly on alternate days; the vomit consisted of "watery phlegm, very sour," and once of blood. He had lost nearly a stone in weight. He had always been careful in his diet. He had attacks of faintness, prostration, and melæna. At the operation an ulcer was found in the first portion of the duodenum, together with many adhesions. There was a small scar of a gastric ulcer on the posterior surface. Posterior gastro-enterostomy was performed. The patient recovered. On May 31st, 1901, he had gained 12 pounds, could eat well, and had had no "attacks" since the operation. His weight in November, 1902, was 8 stones 9 pounds.

CASE 6.—Nov. 2nd, 1901; male, aged 40 years. The symptoms began in June, 1900, with burning pain and vomiting after food, generally half an hour after a meal. There was no hæmatemesis. Two months previously he had an attack of vomiting which lasted for two days; extreme irritability of the stomach was present. There was no melæna. On examination a huge stomach with contractions was found. Free hydrochloric acid was present. Loud gurglings could be heard at the pylorus. The patient had had severe cramps in the muscles of the neck and extremities. Tetany. At the operation an enormous stomach was found. There were several ulcers (five well marked) in the stomach and one just beyond the pylorus. Posterior gastro-enterostomy was performed. The patient recovered. His weight before the operation was 8 stones 6½ pounds; in April, 1902, it was 9 stones 3½ pounds. He could eat anything without discomfort and felt better than for years.

CASE 7.—January, 1902; female, aged 26 years. For the last few months the patient had had pain, always after food, coming on immediately and lasting for three or four hours. She had therefore limited her diet and had lost weight. Four weeks previously she had hæmatemesis and melæna. The melæna had continued ever since and was now threatening to end disastrously. She had fainted in bed several times. Her pulse was 96. She was very pallid and had become much thinner during the last four weeks. At the operation an ulcer was found in the stomach on the posterior wall. An ulcer, elongated and thickened, was found in the duodenum, feeling like a date. There were many adhesions to the gall-bladder and the liver. Posterior gastro-enterostomy was performed. The patient made a perfect recovery and in September, 1902, was reported to be in perfect health. She had regained her lost weight and seven pounds over and was able to take any food without discomfort.

CASE 8.—Feb. 3rd, 1902; male, aged 43 years. The patient had had long-standing stomach trouble which began 20 years ago; he had pain after food and vomiting. He had been more or less subject to indigestion and had carefully limited his diet, vomiting from time to time in large quantities. The motions were occasionally tarry. In the previous October he had a sharp attack of hæmatemesis and melæna. The stomach was now very dilated and was two inches below the umbilicus. In the last four months he had lost a stone in weight. At the operation a very large flaccid stomach was found. At the pylorus and a little beyond there was much thickening, which formed a tumour equal in size to a walnut. On the anterior surface there was a distinct scar about three inches from the pylorus. On the posterior surface a similar scar with adhesions to the transverse mesocolon was found. Posterior gastro-enterostomy was performed. The patient recovered. In August, 1902, he was reported to be in good health, quite free from stomach troubles, and had gained a stone in weight.

CASE 9.—June 12th, 1902; female, aged 37 years. About ten years ago the patient began to suffer from pain and sickness; she was laid up in bed on several occasions. The vomiting was "dreadful" but no blood was ever observed. For seven years she had continual indigestion. At the end of that period she had alarming hæmorrhage and was in hospital for five weeks. Vomiting and pain have continued intermittently since. She was advised by a consultant to undergo operation last year. She had a dilated stomach; for several months she had noticed occasionally that her stools "were black as ink." At the operation numerous adhesions were found at the pylorus and the duodenum, especially on the posterior surface. The stomach was found to be very large. There was some marked local thickening of the head of the pancreas. Posterior gastro-enterostomy was performed. This was an example of chronic interstitial pancreatitis due to gastric and duodenal ulceration. The patient recovered. By August she had gained 12½ pounds and by Sept. 4th there was a still further gain. On Oct. 15th she was two stones heavier than at the time of the operation. In February, 1903, she had gained six pounds more.

CASE 10.—July 2nd, 1902; male, aged 47 years. The patient had had indigestion for four or five years, which had been gradually increasing in severity until the present time, when he was disabled from work. Pain after food was the first symptom coming on about one and a half hours after a meal and increasing in severity for an hour unless eased by vomiting, which always afforded relief. There had never been hæmorrhage. On examination a very large stomach, descending about one and a half inches below the umbilicus, before inflation, was found. A few contractions were seen on inflation. He had "cramps" in his arms and hands, rarely in his legs; this was especially noticed during the last two months. Tetany. At the operation a very large stomach was found. There were a large scar on the posterior surface near the lesser curvature about two inches from the pylorus and a second scar at the beginning of the second portion of the duodenum. There were many adhesions round the pylorus to the gall-bladder, the liver, and the abdominal wall. Posterior gastro-enterostomy was performed. The patient made a rapid recovery and within three weeks was eating ordinary meals with great relish.

CASE 11.—Oct. 6th, 1902; male, aged 30 years. The patient had had symptoms of gastric ulcer for five years; he had pain after food about one or two hours after every ordinary meal; also occasional vomiting, some eructations, and melæna. During the last six months the pain had come on about three hours after food and had always been easier if a little fluid food or a biscuit had been taken. He was quite unable to take ordinary food and treatment, though carefully followed out, had not helped him. He was losing weight and was becoming progressively anæmic. He had a large splashy stomach. Melæna had not been noticed for two months. At the operation a moderately dilated stomach was found; the scar of a duodenal ulcer was found just beyond the pylorus. There were some thickening and puckering. On the posterior surface of the stomach, near the pylorus, was a white scar of the size of a French bean. There were some adhesions to the upper part of the transverse mesocolon.

CASE 12.—Oct. 30th, 1902; male, aged 28 years. For 14 months he had had indigestion. At the onset he had an acute attack of indigestion lasting five days. He had occasional vomiting then but no blood. He fainted several times and had tarry motions. During the last three months he had become progressively worse, had lost over a stone in weight, had constant pain after food, and had occasional vomiting. He could now take only fluids and was "wearing down" fast. He had a moderately dilated stomach. Free hydrochloric acid was present. Old blood was noticed in the stools in the infirmary almost daily. At the operation duodenal and gastric ulcers were found. The duodenal ulcer in the first portion was of about the size of a threepenny-piece, very hard and slightly adherent. There was a scar on the posterior surface of the stomach near the pylorus. There was hernia of almost the whole small intestine through the opening in the transverse mesocolon. Death occurred on the tenth day.

CASE 13.—Jan. 17th, 1903; female, aged 28 years. In May, 1896, the patient had a sudden attack of hæmatemesis and fainting. She was in bed for six weeks. For 18 months subsequently she was in very poor health, had indigestion, vomiting, and constipation. Then she had six months of good health. In April, 1900, indigestion began again; she was under medicinal treatment for six months with much benefit. In January, 1902, she had hæmatemesis and again treatment in bed for four weeks. Four months ago she had another attack of hæmatemesis. She saw a medical man then for the first time and was in bed under treatment for seven weeks. During the last month the symptoms had returned. Pain came on about an hour after food—sometimes just after food. She vomited three or four times a day. On examination she had a tender epigastrium—pressure caused a pain through to the back. There was no dilatation of the stomach. There was excess of free hydrochloric acid. At the operation, on examination, an ulcer was found about three or four inches from the pylorus close to the lesser curvature. It was as large as a shilling, very dense, and adherent to the pancreas behind. A second ulcer was found in the duodenum, just beyond the pylorus, about a quarter of an inch in diameter. Posterior gastro-enterostomy was performed. The patient recovered. By March she had gained five pounds in weight and was eating well. She was in good health in March, 1904.

CASE 14.—Jan. 22nd, 1903; male, aged 47 years. In January, 1902, the patient had a severe attack of melæna. Several years before this he had been subject to indigestion and inability to eat heartily, but for a few months before this attack of bleeding had been in better health than usual. Since this attack he had had many others of melæna and hæmatemesis. He had been in a nursing home in London for 13 weeks under treatment for duodenal

ulcer and while there had had occasional severe bleedings and his hæmoglobin count was only 18 per cent. On examination he was very thin and anæmic. A dilated, obviously contracting, stomach was seen, from which he shortly afterwards vomited a quart of fluid containing blood. This patient looked very worn and ill. It was necessary to infuse saline solution during and after the operation. The day and night before operation he had copious melæna. At the operation an enormous stomach, slightly hypertrophied, was found. The first portion of the duodenum was imbedded in a mass equal in size to a lemon; there was inflammatory thickening round an ulcer. On the greater curvature there was an induration equal in size to a shilling near the pylorus. Posterior gastro-enterostomy was performed. The patient recovered. He was soon able to take ordinary diet. By March he had gained seven pounds. He had a severe attack of diarrhœa lasting four days in the fifth week. In July, 1903, he had gained four stones and could eat heartily. He was quite well in July, 1904.

CASE 15.—Feb. 9th, 1903; female, aged 56 years. In February, 1892, the patient was in the infirmary for removal of an ovarian cyst. In the notes it is said that she then suffered much from indigestion and on one occasion had melæna. Since then Dr. Woods had attended her for chronic indigestion. On several occasions there had been severe melæna. In December, 1901, hæmatemesis occurred. In 1887 a medical man diagnosed an acute illness as "ulcerated stomach." She now had pain two or three hours after a meal all over the upper part of the abdomen and frequently "heaving and vomiting." She could take nothing solid except biscuits, which she took to relieve the pain as soon as it came on. During the last twelve months she had lost over three stones in weight. In September, 1902, she had a prolonged attack of melæna. She had persisting anæmia. At the operation a mass of the size of a Tangerine orange was found in the first portion of the duodenum. There was a milky opacity of the overlying peritoneum. In the stomach near the greater curvature, about four inches from the pylorus, was an ulcer equal in size to a sixpence. The omentum was crumpled up and adherent over it. The patient recovered.

CASE 16.—Feb. 19th, 1903; male, aged 62 years. He had suffered from indigestion and vomiting for several years. He said that he did not remember when he was able to take an ordinary meal in comfort. Three years ago he was seen by a physician who diagnosed pyloric stenosis and gastric dilatation and advised operation. Since then the vomiting and pain had increased to such a degree that the patient said he "cannot go on any longer." On examination there was an enormous stomach actively contracting. At the operation a large hypertrophied stomach was found. There were several scars on the stomach. The pyloric region in both gastric and duodenal sides was scarred and stenosed. Posterior gastro-enterostomy was performed. The patient recovered. In May, 1904, he had gained two and a half stones in weight.

CASE 17.—April 11th, 1903; female, aged 19 years. Her first symptoms were observed in September, 1901. She had quite at the beginning an attack of hæmatemesis. She was then under careful treatment for over six weeks. When she began to take solid food the pain was noticed, generally half an hour after a meal. Vomiting and pain were constant after all solid foods, so that for "several months" she had lived entirely on fluids. For over three months now the pain had been increasingly severe and she had given up her work. Recently she had had a slight attack of hæmatemesis. The stomach was slightly dilated. At the operation ulceration was found near the cardiac end about one inch below the lesser curvature. There were some adhesions round the pylorus and duodenum involving the gall-bladder and surroundings. Posterior gastro-enterostomy was performed. The patient recovered.

CASE 18.—June 9th, 1903; male, aged 30 years. About 15 months ago the patient first noticed a sharp burning pain in the epigastrium a little to the left of the middle line. This was worse after food at first but latterly he had had most pain when fasting. He now felt easy when a moderate meal was taken, but in about an hour had "very bitter belching and water-brash," and then pain became steadily more acute. He had vomited rarely until recently. He was now losing weight—one stone was lost in the last five weeks. The stomach was slightly dilated. At the operation a duodenal ulcer in the first portion about one inch beyond the pylorus was found. There was a hard pellet of scar tissue in the posterior wall of the stomach about two to three inches from the pylorus. The patient recovered. His weight before operation was 8 stones 3 pounds. On Sept. 9th, 1903, it was 8 stones 8 pounds; and on Sept. 3rd, 1904, it was 9 stones 1 pound.

CASE 19.—July 25th, 1903; male, aged 30 years. For several years he had suffered on and off from indigestion and had to be careful and sparing in his diet. Two months ago he had profuse hæmatemesis and for several days melæna. He fainted. Since then he had been kept in bed on very small quantities of liquid food but these give him pain and any attempt at increase caused vomiting. At the operation a duodenal ulcer was found immediately beyond the pylorus. There was a gastric ulcer near the greater curvature about three inches from the pylorus—a dense, white, very hard scar. Posterior gastro-enterostomy was performed. The patient recovered and has since been perfectly well.

CASE 20.—Dec. 2nd, 1903; male, aged 35 years. For two or three years the patient had had slight pain and discomfort after food, with foul and sour eructations. He began to vomit about one year ago, the act being sometimes induced in order to relieve his pain. No hæmatemesis or melæna was noticed. The stomach reached one inch below the umbilicus. At the operation the scar of an old ulcer was found on the posterior surface of the stomach near the lesser curvature. An ulcer of about the size of a sixpence was also found in the concavity of the first part of the duodenum. The patient recovered. Since the operation he has gained over two stones in weight and "can eat anything."

CASE 21.—Dec. 23rd, 1903; male, aged 28 years. The patient had suffered for six years from indigestion. There was pain in the epigastrium and between the shoulders after food. He was much troubled by a feeling of distension. There was no vomiting. At the operation a large scar with thickening on the posterior surface of the stomach was found, also considerable thickening in the duodenum. Posterior gastro-enterostomy was performed. The patient recovered. For some weeks after the operation he complained of a burning pain in the pit of the stomach, especially when fasting. Large doses of alkalies relieved him and he was in good health and free from pain in July, 1904.

CASE 22.—Jan. 27th, 1904; female, aged 61 years. For the last three months the patient had pain and fulness after food but no vomiting. The pain came on about half an hour after food. On examination a large stomach was found. A tumour was felt beneath the upper part of the right rectus. At the operation a large inflammatory deposit was found round the duodenum, the gall-bladder, and the pylorus. There were no gall-stones. The mass was adherent to the pancreas which was greatly indurated and enlarged at this part. There was a big and thick stomach. Posterior gastro-enterostomy was performed. The patient recovered.

CASE 23.—July 15th, 1904; male, aged 25 years. The patient had had indigestion for three years. He had a feeling of fulness before he had taken half a meal, followed by severe pain. He had never vomited except when he made himself sick in order to get rid of the fulness. At the operation the stomach in the pyloric region and the first part of the duodenum were found to be adherent to the under surface of the liver. Scars were also found on the posterior surface about two inches from the pylorus. ? Recent perforation. Posterior gastro-enterostomy was performed. The patient recovered.

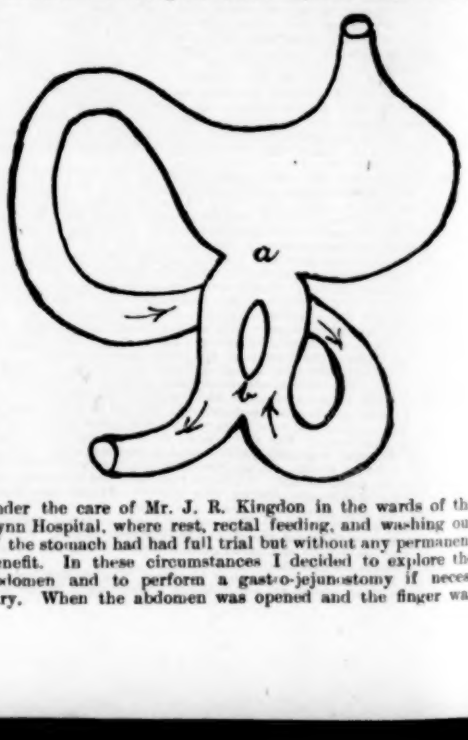
Leeds.

# THE SEPTIC ORIGIN OF GASTRIC AND DUODENAL ULCERS.

BY W. BRUCE CLARKE, M.B. OXON., F.R.C.S. ENG.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

IT is pretty generally acknowledged that the cause of gastric and duodenal ulcers is wrapped in obscurity. Any facts, therefore, that tend to elucidate this question are worthy of notice. This must be my excuse for the following few remarks on a case on which I have recently performed a gastro-jejunostomy.

The patient, a man, aged 55 years, was admitted under my care early in November, 1904, suffering from a gastric ulcer for which he had been treated at intervals during the last six years. His history, which has been fully verified by subsequent inquiries, is as follows. He is a sailor, an occupation which he has followed for many years. Just six years ago he was shipwrecked and spent 16 days in an open boat before he was picked up. During that time he suffered greatly from exposure and had nothing to eat but some mouldy maggoty bread and the water he drank was putrid. Two days after he was rescued he suffered from violent pains in the stomach and vomited everything he took for five days. He said that the vomit at that time was yellow and then became black. He had never been well since for any length of time but had suffered from attacks of pain and vomiting, usually about once a fortnight, and had always been obliged to be very careful about his diet ever since. Previously he enjoyed the best of health and could eat anything. He had been under medical treatment off and on during the whole time, in addition to being




under the care of Mr. J. R. Kingdon in the wards of the Lynn Hospital, where rest, rectal feeding, and washing out of the stomach had had full trial but without any permanent benefit. In these circumstances I decided to explore the abdomen and to perform a gastro-jejunostomy if necessary. When the abdomen was opened and the finger was

introduced a large amount of thickening was felt in the region of the pylorus, extending both towards the stomach and the duodenum. The stomach was somewhat dilated. The operation of retrocolic gastro-jejunostomy was performed, the portion of jejunum selected being about seven or eight inches from the commencement of that part of the intestine. The stomach and jejunum were joined by a double row of continuous stitches, the mucous membrane being united by catgut and the peritoneal and muscular coats by silk (see diagram (*a*)). In addition to this, a jejuno-jejunostomy (*b*) was performed at the same time so as to avoid any chance of a vicious circle being set up, a plan which I now generally adopt. The arrows indicate the direction of the natural flow of intestinal contents and the purpose which is served by the double opening, (*a*) serving for the passage of stomach contents directly into the jejunum and (*b*) allowing the bile and pancreatic fluid to pass directly down the intestine without first mounting into the stomach.

Mayo Robson and Moynihan[1] make the suggestion that oral sepsis is responsible for many gastric ulcers, a view with which I quite concur, but I have never before come across a case in which the clinical evidence of this view was presented in so striking a fashion. It seems to me, therefore, worthy of record. Anything which emphasises the dangers of oral sepsis deserves to be recorded.

Harley-street, W.

## THE RÔLE OF AN EXCESSIVE MEAT DIET IN THE INDUCTION OF GOUT.

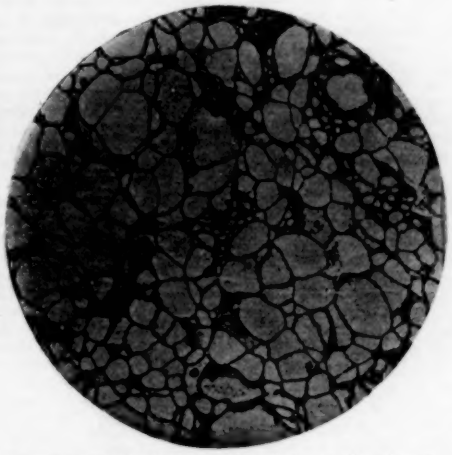
BY D. CHALMERS WATSON, M.D. EDIN., F.R.C.P. EDIN.,
LATE PHYSICIAN, MARSHALL-STREET DISPENSARY, EDINBURGH.

IN 1904 I submitted evidence in favour of the view that there is an infective element in gout. This evidence was obtained from the examination of the tissues from a case of acute gout in a fowl[2] and from the histological examination of the tissues in chronic gout in man.[3] It may be some time before conclusive evidence of the existence of an infective element is available. If we provisionally accept this view the question naturally presents itself as to how far its adoption is in harmony with a well-established fact of the disease—viz., the importance of diet (solid and liquid). It appears to me that a belief in the infective nature of gout in no way minimises the importance of a study of diet and for this reason: if there is an infective element in the disease the main source of infection is the digestive tract and there is good reason to believe that the activity of the bacteria in the intestinal contents must depend largely on the character of the foodstuffs.

In view of the generally admitted fact that an excess of meat diet is prejudicial to most gouty subjects I have sought to determine by observations on animals whether an excessive meat diet exerted a specific action on any of the ductless glands. My results have shown that a diet of raw meat and water (Salisbury diet) exercises a very marked effect on the thyroid glandular system. The results obtained from investigation in poultry were communicated to the Physiological Society in March, 1904, and in December the results of a similar investigation on rats were communicated to the same society. The present paper is a *résumé* of the more salient features of these investigations from the clinical standpoint.

*The effect of an exclusive raw meat and water diet on the thyroid and parathyroid glands in poultry.*—As a result of feeding three healthy fowls on an exclusive raw meat and water diet for periods ranging from 13 to 16 months, a very striking hypertrophy of the thyroid and parathyroid glands was induced in all the animals. The parathyroid glands, instead of being microscopic structures, appeared as large glands, considerably larger than a pea; the thyroid glands were much enlarged and weighed from eight to ten times or more the weight of the normal gland. Histologically the parathyroid glands showed the normal appearance of parathyroid tissues; the thyroid glands presented the appearances characteristic of simple parenchymatous goitre in the human subject—viz. (see Figs. 1 and 2), great enlargement

FIG. 1.



Thyroid gland of fowl fed on ordinary food. (× 50.) Observe (1) the size of the vesicles; (2) the thickness of the walls of the vesicles; (3) the amount of intervesicular glandular tissue. Cf. Fig. 2.

FIG. 2.

Thyroid gland of fowl fed on raw meat and water. (× 50.) Observe (1) the increase in size of the vesicles; (2) the increased thickness of wall of the vesicles; (3) the diminution in amount of intervesicular glandular tissue. Cf. Fig. 1.

of spaces which were distended with colloid material, enlargement of the wall of the vesicles, and in some areas proliferation and shedding of the epithelial cells, with hæmorrhage into the vesicles. So far as I am aware, this is the first time that there has been induced experimentally in animals an enlargement of the thyroid gland similar to that seen in simple parenchymatous goitre in the human subject.

*The effect of an exclusive raw meat and water diet on the thyroid and parathyroid glands in rats.*—As the result of an investigation on 12 animals which were fed on an exclusive raw meat and water diet for periods ranging from six weeks to four and a half months it was found that definite changes were induced in the thyroid gland in the great majority of cases (ten out of 12). The nature of the change was, however, quite different from that observed in the case of the poultry. The distinctive features were observed on histological examination (see Figs. 3 and 4), which showed (*a*)

[1] Diseases of the Stomach and their Surgical Treatment. 1904. Second edition, p. 165.
[2] Observations on the Pathogenesis of Gout, Brit. Med. Jour., Jan. 9th, 1904.
[3] Further Facts in Favour of an Infective Element in Gout, Brit. Med. Jour., July 16th, 1904.

diminution in colloid material; (*b*) proliferation of the epithelial cells and also of the connective tissue; (*c*) evidence of rapid degeneration of the colloid into a mucinoid material; and (*d*) congestion of blood-vessels. Professor W. S. Greenfield kindly examined some of these specimens and pointed out to me that in the more marked cases

FIG. 3.

Thyroid gland of rat fed on bread and milk. (× 200.) Observe (1) the size of vesicles and regularity of outline; (2) the colloid material in the vesicles. Cf. Fig. 4.

FIG. 4.

Thyroid gland of rat fed on raw meat and water. (× 200.) Observe (1) catarrhal changes in the epithelium; (2) diminution of the colloid material.

the appearances bore a striking resemblance to those seen in exophthalmic goitre in the human subject. In the case of the one *adult* meat-fed rat, which succumbed after three weeks of the diet, the appearances of the gland were those of an advanced atrophic catarrh with complete absence of colloid. In the great majority of cases the parathyroid glands were normal. So far as I am aware, this is also the first occasion on which it has been directly shown that a particular diet induces distinct histological changes in the thyroid gland of an omnivorous animal (rat), and, further, that these changes are of a nature similar to those seen in the gland in cases of exophthalmic goitre in the human subject. It should be stated that the animals showed no other signs or symptoms of this disease.

*Remarks.*—The results obtained from the two investigations agree in showing that a diet of meat and water profoundly influences the thyroid gland. In poultry the diet induced a striking hypertrophy of the gland with great increase of colloid material which appeared for the most part normal. In the case of rats the striking change was the alteration in the character of the secretion with catarrh of the epithelial lining of the vesicles, the general appearance of the gland indicating exhaustion of its functions. Further investigations are necessary before the difference in the results obtained in the two classes of animal can be explained. In the meantime it appears to me that these new facts have some practical interest and importance. There are figures in the Blue-book which conclusively prove that there has been a great increase in the consumption of meat in this country in the past 30 years. Evidence is also accumulating to show that thyroid medication is of value in a number of diseased conditions which have no known relationship to the thyroid gland—e.g., skin diseases, mental affections, eclampsia, and other disorders. May not the new facts recorded in the present paper explain the value of thyroid medication in those cases? It is, I believe, possible that as a result of the excessive use of meat there has been established in many subjects an alteration in the character of the thyroid secretion, which defect is remedied in the cases in question by the administration of thyroid gland. The adoption of this view has led me in the past year to try the effect of the administration of small doses of thyroid extract in two inveterate cases of chronic gout which had not been amenable to dietetic measures aided by skilled balneological methods. In both cases the symptoms were relieved to a striking degree, this relief having been so far of a fairly permanent nature.

Edinburgh.

## CARBONIC ACID AS A FACTOR IN THE GENESIS OF THE GOUTY STATE.

BY DONALD F. SHEARER, M.B. OXON., F.R.C.S. ENG.

THE origin of the gouty state, in which it is usual to group together clinically gout, arterio-sclerosis, and chronic interstitial nephritis, is commonly attributed to the over-production or the retention of uric acid or its salts within the body; and a bewildering wealth of chemical experiment, of pathological record, of physiological research, of clinical observation, and of polemical argument awaits him who seeks for further enlightenment. So overwhelming is the mass of literature on the subject that one is justified in putting it all aside in order to consider the question *de novo* and in avoiding the narrow purview of the test-tube or the microscope in order to seek a solution in a less restricted field of vision. We have learnt empirically that these pathological conditions are wont to follow long-continued excesses in diet and also upon deficient muscular activity and we also know that lead poisoning has a definite etiological relationship to them. On the first two we have built our prophylactic and our curative treatments and from them it is possible to trace the genesis of the diathesis. It is interesting to note that notwithstanding all our investigations the modern treatment follows exactly the lines laid down in the days when uric acid was unheard of or had not been causally related to gout. This fact, moreover, which can be verified by a reference to Sir T. Watson's lectures, indicating as it does that uric acid has led us into a blind alley barring further progress, is an additional reason for a wider review.

Now when we have to deal with a common phenomenon following upon diverse antecedents so various as undue indulgence in alcoholic drinks, excessive consumption of nitrogenous food, excess of carbohydrate diet, and insufficient exercise, when we find a mitigation of the symptoms succeeding to an alteration of each separate antecedent as well as of all combined, we may rightly seek for a causal factor common to all the antecedents rather than make the assumption that the cause is other than the known antecedents. A reference to any text-book of physiology tells us that the one factor common to all the antecedents of gout is the tendency to the production of an excess of carbonic acid in the blood. The cardinal feature of muscular exertion is the large increase in the output of carbonic acid without affecting the nitrogenous excreta. Alcohol and carbohydrates can only produce as the end products of their combustion water and carbonic acid. Nitrogenous diet increases metabolism not only of proteid but of carbohydrate and hydrocarbons and thus leads to an increased amount of carbonic acid. And just as the action of the antecedents tends towards an excessive manufacture

of carbonic acid, so the treatment we prescribe, whatever object we have in view and whatever may be our preconceived theory, is actually directed to the diminution or the elimination of this waste product.

There is further an *a priori* probability, derived from a consideration of the anatomical distribution of the lesions, that if there be any toxin circulating in the blood to which the lesions may be attributed that toxin will be one that should normally be eliminated by the lungs in respiration. For the brunt of the disease is borne not by the joints in articular gout but by the arterial system and the kidneys to which are assigned the work of conveying the purified blood and of further purifying it, and when we remember that the chief, if not the sole, portal of exit for uric acid is through the kidneys we have good ground for concluding that all the organic phenomena associated with gout may well owe their genesis to a toxin that has escaped its normal excretion through the agency of the lungs. It is not hard to conceive that such a toxic blood should have the power to inhibit the excretion of uric acid and lead to an accumulation in the tissues such as precedes the gouty paroxysm, while the actual paroxysm itself may be dependent on local deposition initiated by local causes. There is then a natural likelihood that the toxin of gout is, or ought to be, an excretion of the respiratory function and there is an actual factor common to all the antecedents—the excess of carbonic acid. If carbonic acid is to be considered the *fons et origo mali*, if not the *materies morbi*, it must be shown that the excess is sufficient to be appreciable and to alter the composition of arterial blood deleteriously, but it is not necessary that the excess should be large, for, to use a mathematical figure, the integration of an infinite number of infinitesimal divergencies from the normal yields a finite result, and in the second place the toxic action of carbonic acid must be such that the sum of a large number of such intoxications would produce the organic and functional lesions characteristic of the gouty state.

The normal daily excretion of carbonic acid is 800 grammes, corresponding closely to the amount which the oxidation of typical normal diets would yield. A man doing hard work will excrete much more largely—say, 1200 grammes—and in order to maintain his weight would have to consume food of corresponding weight and quality. If now we supply such a quantity of food without permitting the muscular activity necessary to excrete it the man will either not assimilate it, or he will convert it into fat, or he will metabolise it and excrete it as carbonic acid. We know that he does assimilate it, we know that only a very small part is converted into fat, and we are compelled to the conclusion that he does excrete it as carbonic acid. In the absence of the muscular activity, which would naturally increase the rapidity of the pulse and the frequency and depth of respiration, and therefore the quantity of blood exposed to aeration, the exchange of carbonic acid with the air must be greater than normal. Under normal conditions of feeding and blood tension six out of 48 volumes of carbonic acid escape; in the altered circumstances nine must be evolved, other conditions being equal, and in order that nine may be evolved the carbon dioxide tension of the blood must be increased; that is, it must contain something like 72 volumes per cent., since the exchange of gases is proportionate and not a mere overflow. If that be so the arterial blood in such a case will contain over 60 volumes of carbonic acid per cent., and making every allowance for the increased respiration from other automatic agencies there is obviously a large balance of carbonic acid which can only be accounted for on the supposition that during a portion of the day at any rate the carbonic acid tension is such as to allow an extra excretion and in consequence an excessive accumulation of it in the arterial blood with such deleterious consequences as its toxicity may give rise to. The important fact in this connexion is that whereas the normal and healthy man regulates to some extent his diet by his activity, the man who is to become gouty fails to keep the necessary balance and continually and continuously soaks his arterial system and his kidneys with blood overcharged with carbonic acid. All the modes of computing the discharge of carbonic acid point to the same result, whether we estimate it directly or by the oxygen inhaled or by the carbon ingested. In all cases we find that muscular activity, excessive discharge of carbonic acid, and increased diet go together, and we are forced to the conclusion that the gouty individual who on an excessive diet produces, by virtue of the increased metabolism consequent on a nitrogenous diet or by an excessive consumption of carbon compounds, an increased quantity of carbonic acid which is not removed by the direct cardiac and pulmonary effects of exercise must rid himself of it by means of an increased carbonic acid tension of the blood.

As corroborative evidence let me adduce the well-known gout producers—ale and port. A pint of ale contains an ounce of alcohol and an ounce of saccharine matter. A pint of port contains also an ounce of sugar and some five ounces of alcohol. The former will produce by combustion 100 grammes of carbonic acid and the latter 340, so that a pint of ale or a quarter bottle of port are approximately equivalent gout producers and raise the total carbonic acid to be excreted by 12 per cent. It remains to ascertain what, if any, is the effect of an excess of carbonic acid in the blood. It appears that it augments the activity of the vaso-constrictor centre, thus leading to a general contraction of the small arteries. The heightened blood pressure thus produced is increased by the direct irritative action of venous blood on the muscular coats of the arterioles and by the increased peripheral resistance which occurs within the capillary area. One cannot but be struck by the correspondence between this description of the action of venous blood and that which obtains in the gouty condition under consideration and it is obvious that a frequent repetition of such a state would inevitably induce hypertrophy of the muscular coat. And the analogy of lead, a marked vaso-constrictor, which is admittedly a cause of gout, and of adrenalin, which has recently been adduced to account for arterio-sclerosis, shows that there is no need to labour this point. We may conclude, then, that the sum of the small additions to the blood pressure which are consequent upon the excessive presence of carbonic acid is sufficient to account for the muscular hypertrophy. But we have also to account for the fibrosis, for the hyperplasia of connective tissue which exists both in the outer coat of the arteries and in the stroma of the kidney. If we assume that carbonic acid in excess in arterial blood is an irritative toxin, as the cause evidently must be, we can see by analogy how these tissues, which are the first directly subject to the action of arterial blood and are therefore the first to suffer, would develop an excess of fibrous tissue. The action of alcohol on the liver is quite analogous; there we find its irritative effect is expended not on the cellular elements but on the supporting structure in which the venous channels run. So, too, with the irritation of the secretion from carcinomatous cells; the effect is also to produce hyperplasia of connective tissue with subsequent shrinking, and we may therefore easily believe that the effect of the chronic irritation of blood overcharged with carbonic acid would be increased connective tissue.

From the nature of the case it is not possible to show by direct experiment that either fibrosis or muscular hypertrophy follows upon excess of carbonic acid; nor is it any more possible to show that carbonic acid possesses an inhibitory function upon the renal secretion but there are examples which go to show that this is so in general and in particular with regard to uric acid. We can show from the experience of many patients that excess of carbonic acid will produce a high tension pulse followed by certain well-marked symptoms of intoxication, headache, vomiting, and partial suppression of urine and that as recovery takes place we get a soft pulse and a return of cutaneous heat—i.e., vaso-dilatation instead of constriction—accompanied by profuse diuresis, the urine laden with urates. And this form of migraine is attributable either to over consumption of food, especially alcohol, with insufficient exercise, or to exposure to a vitiated atmosphere charged with excess of carbonic acid. In addition to such cases of the temporary toxic action of excess of carbonic acid there are cases where persistent excess leads to chronic nephritis and arterio-sclerosis. An example of this occurred in a patient in whom one lung had been collapsed entirely for many years. In her case any symptoms of uric acid, if they existed, escaped notice and must have been of the slightest, for she was practically an abstainer from meat. Her difficulty in getting rid of the carbonic acid, made greater by the little exercise she took, led in the aggregate to the organic lesions. Many other such cases could be adduced, as well as others of different nature, to show that all the three classes—gout, arterial sclerosis, and chronic interstitial nephritis—and in general all so-called uric acid conditions are inseparably bound up with antecedent conditions, of which the main factor and the common

factor is the excess of carbonic acid in the arterial blood. One would argue, of course, from such cases that carbonic acid is the determining factor which decides whether or no uric acid shall be eliminated or retained. It is worth noting also that its power to limit the water secreted by the kidneys is not absolute, for it may be, and is in the later stages, entirely overborne by the high tension in the glomeruli while still retaining its controlling influence over uric acid. This latter, then, in this view, occupies a secondary place, it remains no longer an etiological factor but becomes merely a retained normal secretion which under certain conditions obtains a pathological importance by being deposited in the neighbourhood of a joint and becoming the active cause of a local inflammation. The primary place must be assigned to the unnatural excess of carbonic acid in arterial blood as the most potent factor in bringing about those changes which go to make up the gouty state.

Putney, S.W.

## THE RATIONAL TREATMENT OF FRACTURES.

BY J. STAFFORD MELLISH, M.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON TO TETBURY COTTAGE HOSPITAL.

RECENTLY I wrote a rough draft of a letter on the rational treatment of fractures which I intended to forward to THE LANCET when I had had time to elaborate it. The leading article on the subject which appeared in THE LANCET of Jan. 21st last, p. 172, at once confirms my opinion that there is much room for improvement in this branch of surgery and emboldens me to send for publication what I had written. The leading article in question says:—

> The lack of completeness in many of our results opens a way, and is responsible, for much of the bone-setting which abounds in this country to-day and it is necessary to consider closely the situation which presents itself. We can all treat with success an uncomplicated fracture, say, of the tibia. The fragments of the broken bone are carefully replaced, splints are bandaged on, and a few weeks' rest in bed produces a firm osseous union of the two portions of the bone. Hardly any deformity can be detected on rigorous examination or even with the aid of a skiagram. Yet when we regard the case from another aspect we see that the result leaves much to be desired. Anatomically there may be little fault to be found with the limb but physiologically it is far from being a perfect member. The patient cannot use it as he could before his accident. The knee-joint and the ankle-joint are stiff; the long confinement between splints has resulted in the formation of numerous bands of adhesions, whether within the joints themselves or in their neighbourhood; muscles and tendons may have shortened from the enforced rest and the pain and tenderness combine with the adhesions in limiting movement. The patient can hardly after six or eight weeks of rest do more than get about feebly with the aid of crutches. After some months an increased mobility of the limb may be obtained and work may be resumed.

I am convinced that this state of things can, and ought to, be prevented in the vast majority of cases of fracture and would be if the methods which I follow and try to describe were commonly adopted. These methods include rubbing and as much freedom and movement as can be permitted in each individual case. Having been dissatisfied with the results of fractures which I have seen treated both in hospitals and in private practice by the ordinary methods of splints and so-called passive movement "administered by the surgeon" I have been at some trouble to apply any hints on the treatment of injuries which might tend to avoid the subsequent stiffness of joints and the muscular wasting which invariably follow the continued use of splints, plaster-of-Paris, and other rigid apparatus, and from a treatise on bone-setting by Dr. Wharton P. Hood, as well as from a later work by the same author on the treatment of recent injuries, I have learnt much which has been of the greatest practical use and which varies widely from the general tenor of the usual text-books.

We have all seen stiff and wasted limbs "go on strike" and become œdematous and painful on being called upon to perform their wonted movements, often taking a longer time to get into a healthy working condition physiologically after the bone was firm than the bone itself had taken to unite. For my part I have come to look upon the bone as being quite able to take care of itself if the surgeon, after having approximated the fractured ends, will give his chief attention to keeping the circulation of the limb in a healthy condition. For this purpose I find that the less splinting one can do with the better and dependence must be placed upon rubbing and movement of a voluntary kind. Where a splint has to be used as in fracture of the humerus, of the femur, or of both bones of the leg, rubbing must be practised and the patient be induced to move his joints voluntarily every day, the splints being taken off for this purpose and then being replaced. The rubbing must commence at the proximal end of the swelling in the region of the fracture and be directed towards the body—i.e., in the direction of the venous circulation, gradually working down to the distal portion of the swelling. As a student I was always taught that the joints above and below a fracture were to be secured and kept rigid, but this course invariably produces stiffness which has to be got rid of after the bone is united. For some time past I have followed the recommendations of the author of the works mentioned above and it is now my practice to endeavour to give the joints free play where possible and in this manner to prevent both wasting and stiffness, by encouraging the patient to move the joints, merely supporting the bone. The patient must be persuaded to flex, to extend, to rotate, and, in short, to execute all the movements that the joints are in the habit of performing voluntarily. This is a much more efficacious and to my mind a more rational proceeding than waiting a stipulated time from the occurrence of the accident, as is generally done, and then beginning so-called passive movement to be performed by the surgeon, for in the voluntary movement the nervous stimuli are called into use, while in the passive they are not and, in fact, there is generally more or less antagonism on the part of the patient. I will describe two cases which have recently come under my care, in one of which I saw the patient two hours after the accident and treated the case according to the plan already enunciated. The other patient had been treated in the more classical manner and I was called in eight months after the accident, when I found her suffering from a stiff knee and ankle, muscular wasting, and pain on attempting to walk.

CASE 1.—The patient, a man, aged 42 years, and weighing 15 stones, had fallen down and broken his leg. On seeing him some two hours after the accident I found the tibia fractured at the junction of the middle and lower thirds, the fibula being fractured somewhat higher up. There was a good deal of swelling. I first flexed the knee and rotated the thigh outwards, resting the knee on a pillow to check muscular spasm, and gently rubbed at the swelling for an hour, beginning at the upper end and gradually working downwards, but always rubbing in an upward direction, in this manner squeezing out of the tissues and passing on the effusion which had gathered there. One who has not tried this would be surprised to find the reduction in size that he will produce and the comfort that it gives to the patient. It is as well during rubbing to take advantage of gravity by elevating the limb when able to do so. I then, as I always do in cases of simple fracture, strapped the leg. To do this I used pieces of strapping about two inches wide, and having placed the broken bones in as good a position as possible I applied the plaster to the leg *from above the break downwards* to the ankle, not tightly, but just so as to support the limb, letting each succeeding piece of strapping overlap its predecessor by about one half. It will be noticed that the limb was strapped from above downwards. This is done in order that in the daily upward rubbing of the limb afterwards the strapping may lie the right way and its edges may not become displaced by the hand of the rubber. In some cases where it is difficult to apply the strapping with equal pressure on account of the shape of the limb, advantage may be taken of the American method of bandaging the legs of racehorses—i.e., by surrounding the limb with a layer of cotton wool or Gamgee tissue, filling up cavities with the wool and strapping over it, thereby producing equal pressure. Having strapped the injured part I applied a pair of Cline's splints and rested the leg on a pillow with the knee flexed in the ordinary way. The splints were removed twice daily and the limb was rubbed for half an hour, morning and evening, the leg being supported and the patient being persuaded to flex and to extend his knee and ankle. On the evening of the fourth day the plaster, being loosened by diminution of the swelling, was taken off and replaced, this being done at intervals as the case demanded. The splints after a week were kept in position merely by two webbing straps and the patient's wife (an intelligent woman) was instructed to undo the straps and to remove the top or

inner splint night and morning for the rubbing. The patient being a very heavy and unwieldy man I did not let him have crutches till the fourth week. Previously to this he got out of bed with help and sat in a chair with his leg resting on a sloping stool made for the purpose; and five weeks after the accident he walked out with crutches, putting his toes to the ground. In another week he could put his weight on the leg and stand without crutches. There was no wasting of the muscles or stiffness of the ankle or knee.

CASE 2.—In the second case which I saw eight months after the fracture had occurred I found the patient in bed with a wasted limb, rigid ankle and knee-joint, and some swelling round the knee, especially over the inner side in the region of the internal semilunar cartilage. I carefully examined the limb and found that the fracture had been a very similar one to that which I have described above. The history given me was that the patient had walked with a stiff limb since the accident and could not get about except with a crutch and then with considerable pain. She was also suffering from crutch palsy. The limb was in a position of eversion and she complained of pain when it was moved. I suggested an anæsthetic, with permission to do what I considered necessary when she was under it. This, however, was refused but I was requested to try to do what I could without an anæsthetic. I first of all began with the ankle rotating and flexing it and felt some small adhesions give way, after which the patient could move the joint. I then proceeded to the knee, adopting the position described by Dr. Hood—i.e., placing the foot between my knees with the inner condyles on either side of the calcaneum, the whole length of the foot resting between the adductor muscles of the thigh. I rotated the leg and the thigh by means of turning my knees in a lateral direction, both internal and external, flexing in each position, meanwhile having kept my thumb on the tender spot on the inner side of the head of the tibia. When flexing the joint I felt and heard the adhesions give way. After this movement I placed my right forearm at the back of the kneejoint, flexing the knee still further with the other hand. There was some pain but the patient could at once flex both joints herself. I got her out of bed and made her hold the back of a chair for support and in this manner she walked across the room and back, bending both joints. The limb was rubbed every day and the patient was made to walk and now she gets about with a stick.

These, I think, are the cases which are somewhat neglected by the profession and which, as a rule, ought never to occur if the recent injuries were dealt with in the first instance in a rational manner. If they were handled with common sense (that rarest of qualities) we should no longer see the daily press teeming with the marvellous cures of the so-called bone-setter fraternity.

Tetbury.

## PYLOROPLASTY.

### REMARKS ON 17 CASES OF PYLOROPLASTY, WITH AFTER-HISTORY FOR PERIODS VARYING FROM TEN YEARS TO FIVE YEARS AND THREE MONTHS AFTER OPERATION.

BY RUTHERFORD MORISON, F.R.C.S. ENG. & EDIN.,
SURGEON TO THE ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

SINCE Feb. 16th, 1895, when my first case of pyloroplasty was published in THE LANCET, I have never ceased to believe that pyloroplasty was the best operation for stricture of the pylorus and it has been with some surprise that I have observed it steadily falling into disuse among the majority of surgeons in this country and in America. The reason for this, so far as I can discover, is that it has been tried and found wanting. If this be true no better reason could be given and the last word would have been said, but my experience does not confirm this idea. An operation which is simple and safe and which interferes in as small a degree as possible with the normal anatomy and physiology of the organs concerned ought, in my opinion, to be rejected only after weighty evidence against it has been produced. In suitable cases I have found that the operation may be relied upon to remove pyloric stricture. With regard, however, to my earlier statement that the stricture will not recur, increased experience has taught me that it was too optimistic; it is not invariably true. It will now be generally admitted that no known treatment will prevent the formation of fresh gastric ulcers and that the scar of the old ulcer or its neighbourhood is a favourite site of recurrence. There is no limit to the contraction of a healing ulcer and the largest pylorus may be closed by it.

The cases suitable for pyloroplasty, as I have previously frequently pointed out, are those with a history of long-standing stomach trouble, foul abundant vomiting towards night, thin patients with dilated stomachs and with a palpable moveable nodule in the pylorus. No other operation, in my opinion, is justified in these cases. They have much diminished in frequency, however, of late years; probably for the same reason as huge ovarian tumours have done the same—viz., that it is so easy to recognise them that they are "worked out."

The brilliant results of gastro-enterostomy obtained by Mayo Robson, Moynihan, and others in the treatment of gastric ulcers have caused quite a boom in this operation, and it seems to be almost as much in fashion to undergo a gastro-enterostomy as to have an appendix removed. But is it not time to call a halt? It takes time to find that there may be objections to new operations. It took ten years for surgeons to discover that myxœdema might follow removal of the thyroid gland. It has taken longer to discover that every diseased ovary does not require removal and that an operation upon it may leave a "cure" worse than the disease. The appendix, too, since Sir William Macewen came to its defence a short time ago, is no longer to be condemned universally as a structure mischievous and useless. (The first and incomplete gall-stone operations occasionally led to the escape of all or a greater part of the bile through an external biliary fistula and this result was said to be attended by no evil result. Where are these patients now? So far as I know none of them survived for ten years.) Is it, then, probable that such a revolution of the chemical and physical processes of digestion as is involved in a successful gastro-enterostomy is likely to be followed by no evils? I do not think that any first-class insurance office would accept at ordinary rates the life of any patient, however apparently well, after this operation. Personally I restrict its use to cases of serious gastric ulceration which have resisted an honest trial of ordinary measures and then I undertake it with a feeling that I should like to know a great deal more than I do of the after-history of patients who were operated upon five years ago.

I have already published in THE LANCET[1] and the *British Medical Journal*[2] the histories of the first 20 consecutive cases on which I had performed the operation of pyloroplasty and the after-history of these cases up to date. All of these patients recovered from the operation, as indeed did the first 23 on whom I operated, and it seemed to me to be a matter of some surgical importance and interest to give a further account of the 20 patients whose history has already been recorded.

For the following notes and abstracts I am indebted to the surgical registrar of the Royal Infirmary, Newcastle, Mr. G. Grey Turner; and the indebtedness is not a small one, for the difficulty of tracing some patients is very great. Of the 20 patients one cannot be found and two are dead. These deaths were both referred to in the report in the *British Medical Journal* above referred to. One (Case 4 in the old lists), a woman, aged 59 years, died 18 months after the operation from cancer of the pylorus (a malignant stricture having been mistaken for a simple one); the other (Case 8 in THE LANCET and Case 7 in the *British Medical Journal*) died from phthisis pulmonalis two years and four months after the operation. In this case there had been no recurrence of stomach symptoms when she died.

There remain 17 cases, of the after-histories of which, varying in length from 10 years to five years and three months, I am able to give the following brief particulars. In three the symptoms have recurred, necessitating a further operation. In two of these cases (Nos. 7 and 9) recurrence was due to stricture; in the third (No. 16) the patient has complained more or less ever since her first operation and it is to be observed that it was then specially noted that there was no organic stricture. She has always looked healthy and well in spite of her stomach complaints.

[1] THE LANCET, Feb 26th, 1898, p. 561.
[2] Brit. Med. Jour., Oct. 19th, 1901.

At the second operation the pylorus easily admitted three fingers. Of the remaining 14 patients, in eight the result may be said to be perfect; in six symptoms more or less troublesome are complained of. On critical examination of these six cases we find that in one (No. 6) no definite organic obstruction was found at the pylorus and that in spite of some trouble (probably of alcoholic origin) the patient has gained weight. In one (No. 8) the patient occasionally vomits but her health is better than before and she is still gaining weight. In one (No. 10) the symptoms are slight and the gain in weight is maintained. In one (No. 12) the symptoms are also slight but the patient has lost weight during the last three years. In one (No. 13) the only complaint is of slight bilious attacks. In one (No. 14) the miserable condition of the patient before operation has been converted into one of comparative comfort.

Newcastle-on-Tyne.

## GENERAL GONOCOCCAL INFECTION.

BY W. H. WYNN, M.D., B.SC. LOND., M.SC., B.CH. BIRM.,

CASUALTY ASSISTANT PHYSICIAN, LATE PATHOLOGIST, GENERAL HOSPITAL, BIRMINGHAM.

To the original idea of gonorrhœa as a purely local disease with acute manifestations and possible chronic complications also of a local character, is now being added that of a general malady, sometimes having an acute septicæmic or pyæmic character, at others producing important inflammatory lesions in many different tissues. A review of the literature shows that practically no tissue can claim immunity from attack; endocarditis, pleurisy, arthritis, meningitis, neuritis, and myositis, inflammations of bone, the eye, the nose, and the skin have all been attributed to this infection. In this gonorrhœa seems to me to show a great family resemblance to such diseases as pneumonia, acute rheumatism, and cerebro-spinal fever, in all of which a diplococcus has been more or less conclusively proved to be the etiological factor. In each case opinion has passed with the growth of bacteriological knowledge from the idea of a local condition to that of a systemic malady. Scarlet fever also has a great resemblance to the members of this group, and although it is never safe to prophesy in pathology, yet one cannot help wondering whether the organism of this disease too will not also prove to be a diplococcus. In each case, although the germ has a different seat of election, the disease often becomes generalised and produces a septicæmia or lesions of various organs and in particular of the serous surfaces (e.g., pericarditis, endocarditis, pleurisy, peritonitis, meningitis, and arthritis). All have in common a marked leucocytosis, and various affections of the skin, the nerves, and the eyes. It is also interesting to note that an attack of one of these diseases appears to predispose to the others. The association of pneumonia with rheumatism, scarlet fever, and cerebro-spinal fever, and of rheumatism with scarlet fever is well known. Rheumatic subjects also seem to suffer severely from gonorrhœa and are difficult to treat.

I had the opportunity a few months ago of examining three cases of gonococcal pyæmia. In one the condition was diagnosed and conclusively demonstrated during life by obtaining the gonococcus in pure culture from the blood. In the other two pyæmia of obscure causation was present and post mortem the only source found was in connexion with a gonorrhœal urethritis; in one of these the gonococcus was cultivated from the blood immediately after death, and in both the organism was demonstrated in the urethral pus and that of various lesions.

CASE 1.—A male, aged 19 years, was admitted into the General Hospital, Birmingham, on March 30th, 1904, under the care of Mr. Gilbert Barling. The patient had been ill for five weeks before admission with an abscess over the right hip; during this time he had become very weak, rapidly lost weight, and had remained in bed. On admission he was extremely emaciated and slightly delirious. There was considerable swelling around the left knee and the joint itself was painful and fluctuating. There were also large painful fluctuating swellings over the left calf, the right hip, and the right calf. He complained of scalding on passing urine and there was a moderate muco-purulent urethral discharge. The probable date of infection could not be ascertained, as the patient denied the existence of gonorrhœa even when it was conclusively established by bacteriological examination of the urethral pus. The temperature was 99·7° F. and the pulse was 144, regular but of low tension. The respirations were 44 and there was considerable bronchitis with abundant muco-purulent sputum. The lungs were everywhere resonant on percussion and auscultation showed only the presence of coarse and fine rhonchi. The apex beat of the heart was in the fifth space in the nipple line; the superficial dulness showed slight extension upwards and to the right. A soft systolic murmur was heard at the apex; it was badly conducted towards the axilla and was regarded as functional. A functional pulmonary systolic murmur was also present. Mr. Barling regarded the case as one of general gonococcal infection and requested me to make a bacteriological examination of the blood. This was done on April 1st. Blood was taken from the left median basilic vein in a sterile hypodermic syringe and added to sloped agar tubes and also to a tube of melted agar at 40°C. which was afterwards plated. At the same time Mr. Barling aspirated the left knee, drawing off several ounces of turbid fluid. Incisions were made into both calves and over the hip, a large quantity of thick yellowish pus being evacuated. Films on cover slips and cultures on simple and blood agar and in broth were made from this pus and the fluid from the knee. Colonies were visible on the cultures from the blood in 24 hours; in 48 hours they appeared as small round semi-transparent discs with a slightly undulated margin. Microscopically these were seen to consist of diplococci in pure culture resembling and giving all the tests for gonococci. The films from the fluid taken from the knee showed gonococci in large numbers both extra- and intra-cellular, the former being often arranged in large clumps; the extracellular germs were as numerous as the intracellular ones. The films from the pus showed gonococci similarly arranged but numerous short bacilli were also present. The tubes of plain agar inoculated with the fluid from the knee gave no growth but the blood agar tubes showed gonococci in pure culture. The pus gave a vigorous growth of bacillus coli in pure culture on the simple agar but mixed growths of bacilli coli and gonococci on the blood agar, the former predominating and soon overgrowing the latter.

The patient's condition improved for a time; the knee became free from fluid but remained tender and there was much discharge from the abscesses. On April 3rd the urethral discharge was again examined and typical gonococci in large numbers were found. No effusion appeared in any of the other joints. On the 14th the knee was again much swollen and two ounces of turbid yellowish fluid were evacuated. This fluid gave the same bacteriological results as before. The systolic murmur at the apex was more pronounced but still not definitely organic. On the 16th the knee was still much swollen and the left ankle and wrist became affected. A diffuse patch, swollen and tender, also appeared just below the margin of the ribs on the right side. On the 21st the knee was opened by incision and drained; it contained several ounces of pus.

The temperature throughout was irregular and showed evening rises to 101° and 102°. At first it was intermittent but later became remittent, the morning temperature being always above 99°. The pulse varied from 130 to 160 and was soft and feeble. The respirations averaged about 36. By April 21st the patient had become still more emaciated, weak, and delirious. The apex beat of the heart was half an inch outside the nipple line and the dulness had increased to the right. Loud rhonchi were heard over both lungs and there was diminished resonance at both bases with fine crepitations. On the 24th he became unconscious and died.

*Necropsy.*—A post-mortem examination was performed the next day. The body was extremely emaciated and showed a bedsore over the left scapula. The heart weighed 11½ ounces and there was considerable dilatation of both ventricles. The myocardium was pale and showed cloudy swelling. The endocardium was blood stained; there were no vegetations but the edges of the mitral valve were cloudy and opaque, suggesting early endocarditis. The right lung weighed 12 ounces and the left weighed 19 ounces. The left pleura was adherent at the base and there was slight excess of fluid in both pleural sacs. There were large areas of collapse in the right lung and the bronchi showed some dilatation. The lower lobe of the left lung contained considerably dilated bronchi forming tubal cavities with thick

muco-purulent contents. The upper lobe contained slightly dilated bronchi. The lungs generally were moderately congested and œdematous. The stomach was slightly dilated and the mucous membrane was catarrhal; the intestines were normal. The liver was enlarged, weighed 75 ounces, and showed marked cloudy swelling with recent venous congestion. The right kidney weighed nine ounces; there was considerable dilatation of the pelvis and its calyces. The kidney substance was pale and showed cloudy swelling with commencing fatty degeneration. The left kidney also showed some dilatation of the pelvis; neither contained any pus. The spleen was soft and almost diffluent. The bladder was slightly dilated and showed general catarrhal inflammation. Pus could be squeezed out of the vesiculæ seminales. The prostate and testicles were healthy to the naked eye. The urethra showed an acute purulent urethritis. Films were made from the pus in the urethra, the vesiculæ seminales, the knee-joint, and the abscesses in the legs. In all the gonococcus could be demonstrated. Smears from the mitral valve showed typical gonococci but cultures from the valve remained sterile.

CASE 2.—A man, aged 24 years, was admitted to hospital under Mr. Barling on April 8th, 1904, complaining of pain in the back. This had been first noticed six months previously after an attack of hæmaturia. The pain was at first most marked on the left side but latterly it had been on the right. There had been four attacks of hæmaturia before admission, the first two lasting for about nine days. There was slight pain at the commencement of micturition and during the periods of hæmaturia the patient had noticed that the flow of urine would sometimes stop and then begin again suddenly, accompanied by blood towards the end of the act. He always lay on the the right side, attempts to lie on the left causing pain. On examination there were slight pain and tenderness in the region of the left kidney on palpation but no tumour was felt; the right side was free from tenderness on manipulation. The temperature on admisison was normal. The urine had a specific gravity from 1015 to 1025, an acid reaction, with 3·1 per cent. of urea; no blood was present while he was under observation. The pulse and respirations were of normal rate. On April 15th the left kidney was explored for a possible stone but was found with its pelvis and ureter quite normal. A cystoscopic examination of the bladder at the same time showed a small nodule of about the size of a pea just behind the inter-ureteral bar. A second examination with the cystoscope was made on the 27th and a small translucent papillomatous mass was observed at the base: it was doubtful whether this was growth or merely stringy mucus attached to the bladder wall. On May 13th a small clot was seen at the base of the bladder. A suprapubic cystotomy was then performed and a small circular ulcer about one-sixth of an inch in diameter was found and scraped. There was no evidence as to its cause. The temperature from May 6th to 19th showed evening rises to 100° F. with morning remissions; it then remained normal for a week but on the 25th rose quickly to 103·5°, the pulse being then 136 and the respirations 28. The temperature then continued very irregular and of a pyæmic character. A few crepitations were heard at both lung bases and an apical systolic murmur was present. Later dulness appeared at both bases with bronchial breathing and crepitations. The spleen was palpable. The suprapubic wound remained quite healthy. The patient died on June 13th.

*Necropsy.*—A post-mortem examination was held 16 hours later. The body was considerably emaciated. Rigor mortis was present in the legs only and post-mortem lividity was slight. The suprapubic wound was quite healthy. On cutting through the chest wall numerous small subcutaneous and intramuscular abscesses were found. The pericardium was normal; the heart weighed 11½ ounces. There was a row of small warty recent vegetations on the margin of the auricular surface of the mitral valve and a few similar ones on the tricuspid valve. The aortic and pulmonary valves were healthy. The heart muscle was pale and showed cloudy swelling. Both ventricles were moderately dilated. The lungs were very congested and contained small patches of hypostatic pneumonia. In the upper lobe of the left lung there were two small septic infarcts. The liver was slightly enlarged and fatty. Both kidneys were in a condition of suppurative nephritis; the right contained several abscesses opening into the pelvis, and the left a few miliary abscesses. The spleen was enlarged; it weighed ten ounces and contained a small white infarct at its upper end. The bladder was of small size with a moderately hypertrophied wall. There were a few small red velvety patches at the trigone but no ulceration. The posterior wall showed some small pigmented areas and the mucous membrane generally was catarrhal. At the base of the bladder in the connective tissue of the pelvic wall there were two large abscess cavities. These were burrowing between the bladder and the rectum and around the neck of the bladder. They were entirely subperitoneal and had no connexion with the operation wound. The seminal vesicles contained pus and communicated with the abscesses. The meninges of the brain were cloudy and the subarachnoid fluid was turbid and in excess; these appearances resembled an early meningitis. The brain substance was soft and œdematous but contained no abscesses. Films were made from the pus from the urethra, the vesiculæ seminales, the pelvic abscesses, and the abscesses in the chest wall. All these showed numerous gonococci with bacilli and staphylococci. No gonococci were found in films from the heart valves, the lungs, the spleen, the kidneys, or the meninges, but only bacilli and staphylococci. Cultures were made on blood agar, plain agar, and in broth. The two latter media gave only mixed growths of bacillus coli and staphylococcus aureus. A feeble growth of the gonococcus was obtained on the blood agar from the pus in the vesiculæ seminales and the pelvic abscesses but not from that in other situations. In both cases the growth was mixed with colonies of bacillus coli and staphylococci.

CASE 3.—A male, aged 19 years, was admitted under the care of Dr. R. M. Simon on March 25th, 1904. His friends gave the history that he was well until March 20th when he complained of pain in the back which was regarded as lumbago. He went to work in spite of the pain and of feeling unwell but on the 22nd was obliged to stay in bed. The following day he complained of cough, dryness of the throat, and of feeling "stupid." On admission he was delirious and unable to answer questions. There was some slight twitching of the facial muscles and of the hands. The temperature was 105° F.; the pulse was 124, soft, and very dicrotic. The tongue was covered with a dirty-brown fur. Nothing abnormal was detected in the chest. The abdomen was slightly distended but not tender. There was retention of urine; specimens obtained by catherisation contained much albumin, a few granular casts, 4 per cent. of urea, with a specific gravity of 1020. The spleen was just palpable. A chronic urethritis with a gleety discharge was also present. Enteric fever was at first suspected but there was no rash and the serum reaction gave a negative result. On the 28th a bacteriological examination of the blood was made also with a negative result. He became worse and the delirium increased. The bowels were constipated and the stools were of a light yellow colour. On the 30th he was in a state of stupor. The hands were occasionally moved to the head as though he had pain there. The neck was somewhat rigid and he resisted movements of the head. The pupils were rather dilated but there was no muscular twitching. Some dulness appeared at the lung bases with crepitations. Respirations were 68 and the temperature rose to 105° and finally to 106° just before death, which occurred on the evening of the 30th.

*Necropsy.*—A post-mortem examination was made the next day. The body was that of a well-built muscular man with recent wasting. There was no cyanosis or œdema. The heart weighed 11½ ounces. The pericardium contained one ounce of clear fluid. The myocardium showed marked cloudy swelling and the right side of the heart was dilated and contained mixed post-mortem clot. The valves were healthy and showed no signs of endocarditis. The lungs weighed 20 and 24 ounces. The pleuræ were non-adherent and the cavities contained a little turbid fluid. Both lungs showed scattered miliary abscesses over their surfaces. The right lung was emphysematous and intensely congested. Near the apex of the lower lobe was a septic infarct. The lower lobe of the left lung felt shotty and contained numerous septic foci surrounded by small patches of pneumonia; the rest of the lung was emphysematous. The bronchi and trachea showed vascular injection. The peritoneum was normal; the stomach showed some catarrhal inflammation. The Peyer's patches towards the lower end of the ileum were enlarged and the large intestine was distended with gas. The liver weighed 74 ounces and showed cloudy swelling. The right kidney weighed seven and a half ounces; it substance was pale with injected vessels and it contained numerous scattered miliary abscesses. The left kidney weighed four and a half ounces and formed a large sac of the size of a fœtal

head from distension of the pelvis. The ureter entered the pelvis by a narrow opening just admitting a No. 8 catheter; the entrance was abrupt and towards the upper end of the pelvis; it had evidently acted as an obstruction and produced the hydronephrosis. The kidney substance was reduced to a mere shell a quarter of an inch thick; it was pale and injected but not fibrosed. The spleen weighed ten ounces; it was soft, purplish-red, but contained no abscesses. The bladder was distended and thin-walled; the mucous membrane was normal. The urethra contained a little thin pus from chronic urethritis and a small abscess was found in the prostate; the seminal vesicles also contained a little pus. There was no urethral stricture. The brain weighed 53 ounces. The subarachnoid fluid was in excess and turbid but there was no pus in the meninges or brain substance. The middle ears, nose, mouth, and frontal and other accessory cranial cavities were all examined but were found to be normal.

A bacteriological examination of the heart blood was made one hour after death by sterilising the skin and withdrawing blood from the heart with a sterile hypodermic needle. The blood was poured on to the surface of sloped agar and after 36 hours showed typical colonies of gonococci in pure culture. The blood from the spleen was examined in the same way but gave negative results. Films and cultures on blood agar were made from the urethra, the prostate, the seminal vesicles, the kidney, and the lungs. All the films showed typical gonococci together with short bacilli and staphylococci. In the urethra the organisms were nearly all intracellular but from the other situations the extracellular ones were as numerous as the intracellular. No colonies of gonococci were obtained from the cultures from the urethra, but a good growth was obtained from the prostatic abscess and a feeble growth from the lungs and kidneys; in all cases except from the blood immediately after death there were also abundant colonies of bacillus coli and staphylococcus albus.

In all three cases the primary seat of infection was the urethra. The date of infection was not determined but in Case 1 the urethritis was in an acute stage, in the other two it was chronic. The vesiculæ seminales were affected in all three cases and possibly the general invasion took place from them rather than from the urethra itself. In Case 3 the prostatic abscess was also a possible site of origin. I regard these secondary foci as more important than the urethritis, because the pus from them showed more numerous extracellular, and, therefore, presumably more active, gonococci than did that from the urethra. In the second case it is possible that the disturbances to the base of the bladder from the operation was the exciting cause of the general infection by lowering the resistance of the part and causing the spread from the seminal vesicles to the pelvic connective tissue. General gonococcal infection is much more common in males than females and the primary seat is almost always the urethra or metastases secondary to this in the neighbourhood. It is uncommon in females although it may follow primary infection as in males. Hamilton[1] suggests that greater resistance is offered to the general spread of infection in the uterus, the adnexa, and the pelvic peritoneum. But I would suggest that the difference is chiefly accounted for by the greater length of the male urethra and the presence of numerous diverticula and sinuses which provide an excellent breeding ground for the germs. Gonorrhœal ophthalmia may also give rise to general infection and many cases of arthritis in infants and even of pyæmia have been described.

The subcutaneous abscesses found in Cases 1 and 2 are among the rarest complications of gonorrhœa. It was once believed that pus was rarely if ever produced by the gonococcus alone but only by the addition of other organisms. In Case 1 although the gonococcus alone was found in the blood and the turbid knee fluid, yet the purulent foci also contained bacilli coli. In Cases 2 and 3 bacilli coli and staphylococci were also found in the pus, so that these cases would seem to favour the original view. Many cases, however, have been described in which pure cultures of the gonococcus were obtained from pus. Inoculation experiments have only given negative results. Wertheim[2] in 1892 introduced cultures under his own skin; a circumscribed inflammation without suppuration only resulted. Steinschneider[3] in 1893, in repeating the experiment, obtained only negative results. Putting on one side the peri- and para-urethral abscesses and inguinal buboes where the infection can spread by direct extension or lymphatic paths there are still some relatively rare cases resembling the three I have reported in which suppuration has developed far from the urethra and in some of these the gonococcus has been found alone. In some of these cases abscesses have developed at places previously bruised or damaged. In a case recorded by Cassel[4] in 1903 an abscess in the back containing a pure growth of the gonococcus followed purulent gonorrhœal ophthalmia in an infant.

Case 2 showed a condition which has generally been regarded as occurring only in women—pelvic cellulitis. In this case the peritoneum was not involved, but Battez[5] has collected 30 cases of gonorrhœal pelvic peritonitis in the male following secondary infection of the bladder, the prostate, or the seminal vesicles. Case 3 showed a typical pyæmia with abscesses, especially in the lungs and the kidneys. I have not discovered a case previously in which gonococci have been described in the lungs. The pus in the lungs and kidneys showed a mixed infection and no case has as yet been described in which the infection of the kidney was proved to be due to the gonococcus alone.

Recent endocarditis was present in the two first cases which had evidently developed during the course of the illness. In Case 1 it was quite early and was only revealed by slight cloudiness and opacity of the edges of the mitral valve; cultures from it were negative but smear preparations showed gonococci alone present. In the second case small warty vegetations were present but cultures and films showed no gonococci but only bacilli coli and staphylococci. The former I regard as an undoubted gonorrhœal endocarditis but the evidence for the latter is inconclusive; gonococci may have been present in the early stages and begun the process, these organisms later disappearing and being replaced by a mixed infection. This is in harmony with what we know of gonorrhœal arthritis in which gonococci are usually only present in the quite early stages.

Enough evidence has now accumulated to show that the lesions and symptoms of the general infection [illegible] upon three factors—viz., (1) direct infec[illegible] coccus itself; (2) an absorption of [illegible] (3) mixed infection with other germ[illegible] evidence that gonococci can circ[illegible] duce the lesions found in the v[illegible] invasion by the organisms. A[illegible] Capitan had positive results fr[illegible] later Petroni, in 1883, and Ju[illegible] results. These early observe[illegible] others, especially on the cor[illegible] dition appears to have recei[illegible] few cases are described in w[illegible] obtained from the blood. On [illegible] have met with uniformly negat[illegible] 1892, did not succeed with the b[illegible] that sufficient blood was not ta[illegible] that the organisms do not remain [illegible] become localised in the organs and [illegible] case of pneumonia supervening on the dec[illegible] obtained a pure culture from the blood on the [illegible] day but failed later.

De Christmas[6] and Wassermann[9] have separately studied the toxins; the latter obtained them by growing the gonococcus on a special medium. To these toxins he attributes the general symptoms. Experimental inoculation resulted in a very lively reaction at the site of injection with fever, malaise, muscular and articular pains, and loss of weight. This general intoxication had already been hinted at by Pidoux as early as 1866, who had called attention to the disproportionate alterations in the face and general health of patients suffering from recent gonorrhœa, their pallor, slight rapid wasting, discolouration of the skin, and fever. Padrez,[10] in 1885, and Drobney, in 1898, observed that in those cases in which the gonococci were found within the pus cells the disease ran a milder course than when the organisms were free. They claim that the toxin inhibits phagocytic action and so affords an opportunity for general

[1] Hamilton: Montreal Medical Journal, February, 1902.
[2] Wertheim: Archiv für Gynækologie, 1892, p. 66.
[3] Steinschneider: Berliner Klinische Wochenschrift, 1893, p. 729.
[4] Cassel: Verein für innere Medizin, Berlin, June 8th, 1903.
[5] Battez: Brit. Med. Jour., Epitome, April 5th, 1902.
[6] Trapeznikoff: Vratch, vol. vii., p. 15, 1892.
[7] Bressel: Münchener Medicinische Wochenschrift, March, 1903.
[8] De Christmas: Annales de l'Institut Pasteur, 1900, p. 331.
[9] Wassermann: Berliner Klinische Wochenschrift, 1897, No. 32.
[10] Padrez (1885) and Drobney (1898): Quoted by Walker, Medical Annual, 1903.

invasion. My own observations would support this, for, as I have stated above, the more active the lesion the more extracellular were the organisms. On the other hand, I think that in many cases a mixed infection with other pyogenic germs plays an important part. The gonococcus is rarely isolated in pure culture and if found at all it is usually only during the earlier stages. It would be surprising if mixed infection did not occur, considering the ease with which pyogenic germs could invade the body through the primary gonorrhœal lesions. The bacillus coli seems to be the organism most usually found, which is in correspondence with the fact that it is the commonest organism found in cystitis and other diseases of the urinary passages. When found in lesions after death little importance can be placed in its presence as it is found so often in a variety of diseases from "agonal" or post-mortem invasion. But whatever organism be found in association with the gonococcus its action is, I believe, purely secondary. It completes the work begun by the gonococcus which being of more delicate growth disappears before its stronger competitors.

*Diagnosis.*—Cases of gonorrhœal pyæmia and septicæmia are rarely diagnosed during life. This is partly due to the fact that very little attention has been paid to the possible gonorrhœal origin of pyæmia, but also because these cases do not often occur in connexion with an acute gonorrhœa but from secondary foci in the prostate or seminal vesicles which are often latent. Gonorrhœa may be denied by the patient and the chronic gleety discharge overlooked by his attendant. Ullmann[11] reported five cases of fatal gonorrhœal pyæmia, in four of which the necropsy showed the point of origin to be a prostatic abscess. In three of the cases the clinical diagnoses were typhoid fever, malignant tumour of the prostate, and purulent cystitis and septicæmia of doubtful origin. Such cases show the need for the routine examination of the urinary organs and especially of the prostate in all cases of pyæmia of obscure causation, just as the middle ear is now always examined in similar cases. Gonorrhœal infection has no special clinical features which differentiate it from other pyæmias and a positive diagnosis can only be made by a bacteriological examination of the blood or of any accessible lesions.

*Technique.*—For the examination of the blood stained films [illegible] not sufficient; cultures must be made upon suitable [illegible]. The essential constituent of these media seems to [illegible]al serum or similar albuminous material from the [illegible]body. Practically blood agar is the most convenient [illegible]f cultivating the gonococcus. At least one cubic [illegible]re of blood should be taken with a sterilised hypo[illegible]ringe from one of the large veins of the elbow. No [illegible]n must be used in sterilising the skin; simple [illegible] with spirit and ether is sufficient for this purpose. [illegible]d should then be poured on to the surface of one or [illegible]ar "slopes," the tubes being kept slightly inclined [illegible]the blood has coagulated. A relatively large quantity [illegible]lood must be used as it is necessary to have, as Harris[12] [illegible]s shown, abundant albuminous material present. Another method is to mix the blood with one or two tubes of melted agar kept at a temperature of 40° C., the mixture then being slanted or plated in a Petri's dish. The former method I think is preferable, as a freer access of oxygen is obtained than by mixing the blood with the agar. I have failed with the latter method when the former has been quite successful. For the same reason fluid media are unsuitable as the blood clots and falls to the bottom. For cultivation from pus or lesions of the organs blood agar can also be used. The blood must be liberally distributed over the surface of agar "slants" and not simply a few drops smeared over it. Serum agar is also an excellent medium, one part of blood serum being used to two or three parts of agar. Young[13] has used "hydrocele fluid" successfully, while Wright[14] advocates "urine-serum-agar," prepared by mixing under aseptic precautions with melted agar at a temperature of 40°, one-third to one-half of its volume of a sterile mixture of beef-blood serum (two parts) and human urine (one part). I have had no personal experience of this last method. The identification of the gonococcus is usually said to depend upon three characteristics: (1) characteristic colonies are produced upon certain media; (2) it will not grow upon simple agar or in broth; and (3) it is not stained by Gram's method. Of these, only the first is certain. The colonies appear after 24 hours as minute, greyish, semi-translucent points. In 48 hours they are well developed and under a low magnifying power each is seen to be circular with thin, translucent, sharply defined margins. The margins are slightly undulated and in older colonies may send out slight processes. The colonies become brownish, denser, and granular towards the centre. Wildbolz[15] has succeeded in growing the gonococcus upon agar after cultivating on serum agar for four or five generations, sometimes earlier. This test cannot therefore be relied upon especially as the diplococcus meningitidis is also difficult to grow upon agar. There are also fallacies in the test by Gram's method. Colonies not more than 48 hours old must be used, as other cocci usually staining by Gram's method may be decolourised in older cultures. Mallory and Wright[16] found a Gram-decolourising coccus in an arthritis of the knee, clinically of gonorrheal origin, which in films was regarded as the gonococcus, but cultures proved that it was not that organism. In staining suspected films by Gram's method it is useful to place a few staphylococci in one corner of the slide for a comparison. Practically, then, most reliance must be placed on the appearance of the colonies grown on blood or serum agar and if these colonies are composed of cocci of characteristic appearance and decolourised by Gram's method the identification is certain.

When in cases of obscure pyæmia the blood has been examined during life with negative results I would suggest that the blood from the heart and spleen should be examined as soon as possible after death. Permission for this could often be obtained when an ordinary post-mortem examination would not be allowed. It is also useful when a necropsy is obtained, as bacteriological examinations of the organs and blood 24 hours after death are made untrustworthy by the invasion of other organisms, especially from the intestines.

I must, in conclusion, express my indebtedness to Mr. Barling and Dr. Simon for their kind permission to make use of their cases.

Birmingham.

[11] Ullmann: Deutsches Archiv für Klinische Medicin, 1901, Band lxix., S. 309.

[12] Harris: Bulletin of the Johns Hopkins Hospital, October, 1902.

[13] Young: Journal of Cutaneous and Genito-Urinary Diseases, June, 1900.

[14] Wright: American Journal of the Medical Sciences, January, 1896.

[15] Wildbolz: Centralblatt für Bakteriologie, Feb. 14th, 1902; and Brit. Med. Jour., Epitome, May 31st, 1902.

[16] Mallory and Wright: Pathological Technique, p. 146.

## A HAT PIN 4¾ INCHES LONG IN THE ŒSOPHAGUS PRODUCING A FALSE ANEURYSM OF THE SUPERIOR MESENTERIC ARTERY.

BY H. D. ROLLESTON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO ST. GEORGE'S HOSPITAL;

AND

T. R. C. WHIPHAM, M.B. OXON., M.R.C.P. LOND.,
ASSISTANT CURATOR OF THE MUSEUM AT ST. GEORGE'S HOSPITAL; PHYSICIAN TO OUT-PATIENTS AT THE EVELINA HOSPITAL FOR SICK CHILDREN.

A FEMALE child, three years of age, who had been ailing for two months, was admitted into St. George's Hospital on June 25th, 1904, with wasting, anæmia, rickets, inability to sit up, and a distended abdomen. A diagnosis of tuberculous peritonitis was made and on July 6th the patient was transferred for further treatment to the Atkinson Morley Convalescent Hospital at Wimbledon. While there the child did not improve; she lost weight, developed retraction of the head, and on August 18th vomited some fresh blood clot of the size of a grape and on two subsequent occasions brought up some dark, discoloured blood. She was re-admitted to St. George's Hospital on August 24th, looking like a most advanced case of tuberculous peritonitis, and she continued to get worse. On the 30th she vomited a clot of fresh blood of about the size of a walnut and, becoming very collapsed, died at 8 P.M.

The diagnosis of tuberculous peritonitis rested on the swollen abdomen, the diarrhœa, the enlargement of the spleen and liver, and the wasting; while crackles at the apices of the lungs and retraction of the head suggested more widespread tuberculosis. Hæmatemesis in tuberculous

head from distension of the pelvis. The ureter entered the pelvis by a narrow opening just admitting a No. 8 catheter; the entrance was abrupt and towards the upper end of the pelvis; it had evidently acted as an obstruction and produced the hydronephrosis. The kidney substance was reduced to a mere shell a quarter of an inch thick; it was pale and injected but not fibrosed. The spleen weighed ten ounces; it was soft, purplish-red, but contained no abscesses. The bladder was distended and thin-walled; the mucous membrane was normal. The urethra contained a little thin pus from chronic urethritis and a small abscess was found in the prostate; the seminal vesicles also contained a little pus. There was no urethral stricture. The brain weighed 53 ounces. The subarachnoid fluid was in excess and turbid but there was no pus in the meninges or brain substance. The middle ears, nose, mouth, and frontal and other accessory cranial cavities were all examined but were found to be normal.

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In all three cases the primary seat of infection was the urethra. The date of infection was not determined but in Case 1 the urethritis was in an acute stage, in the other two it was chronic. The vesiculæ seminales were affected in all three cases and possibly the general invasion took place from them rather than from the urethra itself. In Case 3 the prostatic abscess was also a possible site of origin. I regard these secondary foci as more important than the urethritis, because the pus from them showed more numerous extracellular, and, therefore, presumably more active, gonococci than did that from the urethra. In the second case it is possible that the disturbances to the base of the bladder from the operation was the exciting cause of the general infection by lowering the resistance of the part and causing the spread from the seminal vesicles to the pelvic connective tissue. General gonococcal infection is much more common in males than females and the primary seat is almost always the urethra or metastases secondary to this in the neighbourhood. It is uncommon in females although it may follow primary infection as in males. Hamilton[1] suggests that greater resistance is offered to the general spread of infection in the uterus, the adnexa, and the pelvic peritoneum. But I would suggest that the difference is chiefly accounted for by the greater length of the male urethra and the presence of numerous diverticula and sinuses which provide an excellent breeding ground for the germs. Gonorrhœal ophthalmia may also give rise to general infection and many cases of arthritis in infants and even of pyæmia have been described.

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Case 2 showed a condition which has generally been regarded as occurring only in women—pelvic cellulitis. In this case the peritoneum was not involved, but Battez[5] has collected 30 cases of gonorrhœal pelvic peritonitis in the male following secondary infection of the bladder, the prostate, or the seminal vesicles. Case 3 showed a typical pyæmia with abscesses, especially in the lungs and the kidneys. I have not discovered a case previously in which gonococci have been described in the lungs. The pus in the lungs and kidneys showed a mixed infection and no case has as yet been described in which the infection of the kidney was proved to be due to the gonococcus alone.

Recent endocarditis was present in the two first cases which had evidently developed during the course of the illness. In Case 1 it was quite early and was only revealed by slight cloudiness and opacity of the edges of the mitral valve; cultures from it were negative but smear preparations showed gonococci alone present. In the second case small warty vegetations were present but cultures and films showed no gonococci but only bacilli coli and staphylococci. The former I regard as an undoubted gonorrhœal endocarditis but the evidence for the latter is inconclusive; gonococci may have been present in the early stages and begun the process, these organisms later disappearing and being replaced by a mixed infection. This is in harmony with what we know of gonorrhœal arthritis in which gonococci are usually only present in the quite early stages.

Enough evidence has now accumulated to show that the lesions and symptoms of the general infection depend mainly upon three factors—viz., (1) direct infection with the gonococcus itself; (2) an absorption of a toxin, gonotoxin; and (3) mixed infection with other germs. There is now definite evidence that gonococci can circulate in the blood and produce the lesions found in the various organs; there is a true invasion by the organisms. As early as 1878 Bouchard and Capitan had positive results from examination of the blood; later Petroni, in 1883, and Julien, in 1886, obtained similar results. These early observers have been followed by many others, especially on the continent. In England the condition appears to have received but little attention and but few cases are described in which pure cultures have been obtained from the blood. On the other hand, some observers have met with uniformly negative results. Trapeznikoff,[6] in 1892, did not succeed with the blood in 32 cases. It may be that sufficient blood was not taken, but it is also probable that the organisms do not remain long in the blood but become localised in the organs and tissues. Bressel[7] in a case of pneumonia supervening on the decline of a gonorrhœa obtained a pure culture from the blood on the fourth day but failed later.

De Christmas[8] and Wassermann[9] have separately studied the toxins; the latter obtained them by growing the gonococcus on a special medium. To these toxins he attributes the general symptoms. Experimental inoculation resulted in a very lively reaction at the site of injection with fever, malaise, muscular and articular pains, and loss of weight. This general intoxication had already been hinted at by Pidoux as early as 1866, who had called attention to the disproportionate alterations in the face and general health of patients suffering from recent gonorrhœa, their pallor, slight rapid wasting, discolouration of the skin, and fever. Padrez,[10] in 1885, and Drobney, in 1898, observed that in those cases in which the gonococci were found within the pus cells the disease ran a milder course than when the organisms were free. They claim that the toxin inhibits phagocytic action and so affords an opportunity for general

[1] Hamilton: Montreal Medical Journal, February, 1902.
[2] Wertheim: Archiv für Gynækologie, 1892, p. 66.
[3] Steinschneider: Berliner Klinische Wochenschrift, 1893, p. 729.
[4] Cassel: Verein für innere Medizin, Berlin, June 8th, 1903.
[5] Battez: Brit. Med. Jour., Epitome, April 5th, 1902.
[6] Trapeznikoff: Vratch, vol. vii., p. 15, 1892.
[7] Bressel: Münchener Medicinische Wochenschrift, March, 1903.
[8] De Christmas: Annales de l'Institut Pasteur, 1900, p. 331.
[9] Wassermann: Berliner Klinische Wochenschrift, 1897, No. 32.
[10] Padrez (1885) and Drobney (1898): Quoted by Walker, Medical Annual, 1903.

invasion. My own observations would support this, for, as I have stated above, the more active the lesion the more extracellular were the organisms. On the other hand, I think that in many cases a mixed infection with other pyogenic germs plays an important part. The gonococcus is rarely isolated in pure culture and if found at all it is usually only during the earlier stages. It would be surprising if mixed infection did not occur, considering the ease with which pyogenic germs could invade the body through the primary gonorrhœal lesions. The bacillus coli seems to be the organism most usually found, which is in correspondence with the fact that it is the commonest organism found in cystitis and other diseases of the urinary passages. When found in lesions after death little importance can be placed in its presence as it is found so often in a variety of diseases from "agonal" or post-mortem invasion. But whatever organism be found in association with the gonococcus its action is, I believe, purely secondary. It completes the work begun by the gonococcus which being of more delicate growth disappears before its stronger competitors.

*Diagnosis.*—Cases of gonorrhœal pyæmia and septicæmia are rarely diagnosed during life. This is partly due to the fact that very little attention has been paid to the possible gonorrhœal origin of pyæmia, but also because these cases do not often occur in connexion with an acute gonorrhœa but from secondary foci in the prostate or seminal vesicles which are often latent. Gonorrhœa may be denied by the patient and the chronic gleety discharge overlooked by his attendant. Ullmann[11] reported five cases of fatal gonorrhœal pyæmia, in four of which the necropsy showed the point of origin to be a prostatic abscess. In three of the cases the clinical diagnoses were typhoid fever, malignant tumour of the prostate, and purulent cystitis and septicæmia of doubtful origin. Such cases show the need for the routine examination of the urinary organs and especially of the prostate in all cases of pyæmia of obscure causation, just as the middle ear is now always examined in similar cases. Gonorrhœal infection has no special clinical features which differentiate it from other pyæmias and a positive diagnosis can only be made by a bacteriological examination of the blood or of any accessible lesions.

*Technique.*—For the examination of the blood stained films are not sufficient; cultures must be made upon suitable media. The essential constituent of these media seems to be blood serum or similar albuminous material from the animal body. Practically blood agar is the most convenient means of cultivating the gonococcus. At least one cubic centimetre of blood should be taken with a sterilised hypodermic syringe from one of the large veins of the elbow. No antiseptic must be used in sterilising the skin; simple cleansing with spirit and ether is sufficient for this purpose. The blood should then be poured on to the surface of one or two agar "slopes," the tubes being kept slightly inclined until the blood has coagulated. A relatively large quantity of blood must be used as it is necessary to have, as Harris[12] has shown, abundant albuminous material present. Another method is to mix the blood with one or two tubes of melted agar kept at a temperature of 40° C., the mixture then being slanted or plated in a Petri's dish. The former method I think is preferable, as a freer access of oxygen is obtained than by mixing the blood with the agar. I have failed with the latter method when the former has been quite successful. For the same reason fluid media are unsuitable as the blood clots and falls to the bottom. For cultivation from pus or lesions of the organs blood agar can also be used. The blood must be liberally distributed over the surface of agar "slants" and not simply a few drops smeared over it. Serum agar is also an excellent medium, one part of blood serum being used to two or three parts of agar. Young[13] has used "hydrocele fluid" successfully, while Wright[14] advocates "urine-serum-agar," prepared by mixing under aseptic precautions with melted agar at a temperature of 40°, one-third to one-half of its volume of a sterile mixture of beef-blood serum (two parts) and human urine (one part). I have had no personal experience of this last method. The identification of the gonococcus is usually said to depend upon three characteristics: (1) characteristic colonies are produced upon certain media; (2) it will not grow upon simple agar or in broth; and (3) it is not stained by Gram's method. Of these, only the first is certain. The colonies appear after 24 hours as minute, greyish, semi-translucent points. In 48 hours they are well developed and under a low magnifying power each is seen to be circular with thin, translucent, sharply defined margins. The margins are slightly undulated and in older colonies may send out slight processes. The colonies become brownish, denser, and granular towards the centre. Wildbolz[15] has succeeded in growing the gonococcus upon agar after cultivating on serum agar for four or five generations, sometimes earlier. This test cannot therefore be relied upon especially as the diplococcus meningitidis is also difficult to grow upon agar. There are also fallacies in the test by Gram's method. Colonies not more than 48 hours old must be used, as other cocci usually staining by Gram's method may be decolourised in older cultures. Mallory and Wright[16] found a Gram-decolourising coccus in an arthritis of the knee, clinically of gonorrheal origin, which in films was regarded as the gonococcus, but cultures proved that it was not that organism. In staining suspected films by Gram's method it is useful to place a few staphylococci in one corner of the slide for a comparison. Practically, then, most reliance must be placed on the appearance of the colonies grown on blood or serum agar and if these colonies are composed of cocci of characteristic appearance and decolourised by Gram's method the identification is certain.

When in cases of obscure pyæmia the blood has been examined during life with negative results I would suggest that the blood from the heart and spleen should be examined as soon as possible after death. Permission for this could often be obtained when an ordinary post-mortem examination would not be allowed. It is also useful when a necropsy is obtained, as bacteriological examinations of the organs and blood 24 hours after death are made untrustworthy by the invasion of other organisms, especially from the intestines.

I must, in conclusion, express my indebtedness to Mr. Barling and Dr. Simon for their kind permission to make use of their cases.

Birmingham.

[11] Ullmann: Deutsches Archiv für Klinische Medicin, 1901, Band lxix., S. 309.

[12] Harris: Bulletin of the Johns Hopkins Hospital, October, 1902.

[13] Young: Journal of Cutaneous and Genito-Urinary Diseases, June, 1900.

[14] Wright: American Journal of the Medical Sciences, January, 1895.

[15] Wildbolz: Centralblatt für Bakteriologie, Feb. 14th, 1902; and Brit. Med. Jour., Epitome, May 31st, 1902.

[16] Mallory and Wright: Pathological Technique, p. 146.

## A HAT PIN 4¾ INCHES LONG IN THE ŒSOPHAGUS PRODUCING A FALSE ANEURYSM OF THE SUPERIOR MESENTERIC ARTERY.

BY H. D. ROLLESTON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO ST. GEORGE'S HOSPITAL;

AND

T. R. C. WHIPHAM, M.B. OXON., M.R.C.P. LOND.,
ASSISTANT CURATOR OF THE MUSEUM AT ST. GEORGE'S HOSPITAL; PHYSICIAN TO OUT-PATIENTS AT THE EVELINA HOSPITAL FOR SICK CHILDREN.

A FEMALE child, three years of age, who had been ailing for two months, was admitted into St. George's Hospital on June 25th, 1904, with wasting, anæmia, rickets, inability to sit up, and a distended abdomen. A diagnosis of tuberculous peritonitis was made and on July 6th the patient was transferred for further treatment to the Atkinson Morley Convalescent Hospital at Wimbledon. While there the child did not improve; she lost weight, developed retraction of the head, and on August 18th vomited some fresh blood clot of the size of a grape and on two subsequent occasions brought up some dark, discoloured blood. She was re-admitted to St. George's Hospital on August 24th, looking like a most advanced case of tuberculous peritonitis, and she continued to get worse. On the 30th she vomited a clot of fresh blood of about the size of a walnut and, becoming very collapsed, died at 8 P.M.

The diagnosis of tuberculous peritonitis rested on the swollen abdomen, the diarrhœa, the enlargement of the spleen and liver, and the wasting; while crackles at the apices of the lungs and retraction of the head suggested more widespread tuberculosis. Hæmatemesis in tuberculous

peritonitis is such an unusual event that a necropsy was highly desirable, as it was thought that it might disclose some rare condition, such as tuberculous ulceration of the stomach or of the œsophagus.

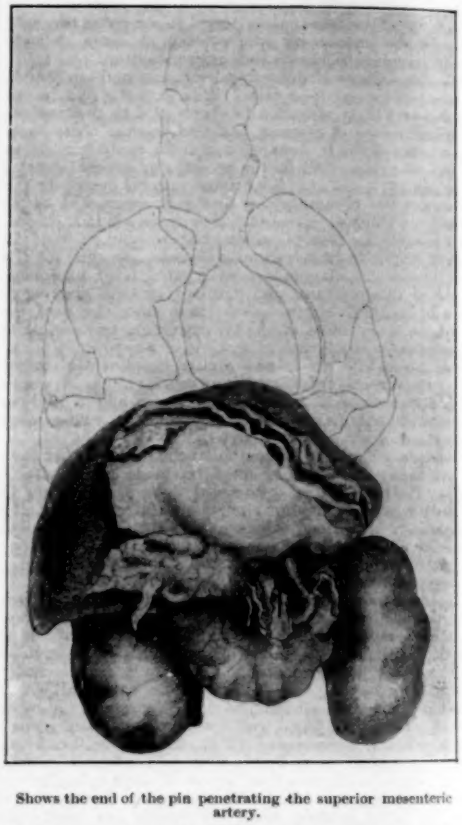
*Necropsy.*—The body was thin and showed marked signs of rickets. There was no external wound or lesion of the skin except some small quite superficial scars over the sacrum, probably the result of pressure sores. The œsophagus (Fig. 1) contained part of a long black pin, resembling a hat pin, of which two and a half inches of the pointed end projected upwards through a small hole in the wall of the gullet on the right side just above the level

FIG. 1.

Œsophagus opened from the back showing the sharp pointed end of the hat pin pointing upwards from the spot where it penetrated the œsophageal wall. To the right of the œsophagus in this situation a suppurating gland is seen.

of the diaphragm. The pin, which was four and three-quarter inches long and partially eroded, had evidently been swallowed head downwards. The actual head of the pin, which was missing and could not be found, had probably become detached soon after swallowing and had been voided *per vias naturales*. The shaft was slightly bent with the concavity forwards and the head end, which was very sharp but not shaped to a point like the other, had penetrated the œsophageal wall at the point described and passing in front of the aorta had pierced the diaphragm and had travelled downwards behind the stomach without injuring it through the extreme posterior portion of the pancreas; thence it turned a little forwards to a point immediately above the duodenum where it had perforated the upper wall of the superior mesenteric artery (Fig. 2). Between the pancreas and the duodenum there was a small false aneurysm filled with blood clot and of the size of a cherry in the root of the mesentery. The track of the pin above this was also filled with blood. The superior mesenteric vein, which lay to the right and slightly in front of the aneurysm, was partially thrombosed with ante-mortem clot. The point or upper end of the pin lay in the œsophagus opposite the apices of the lower lobes of the lungs posteriorly. At this level there was a small suppurating lymphatic gland

FIG. 2.



Shows the end of the pin penetrating the superior mesenteric artery.

behind the œsophagus with a small abscess on either side of it; that on the left was the larger of the two and had invaded to a slight extent the lower lobe of the lung, causing several small foci of suppuration around. A direct communication was found between the œsophagus and the abscess on the right and a similar condition had possibly existed on the left side. Unfortunately in removing the contents of the thorax the œsophagus was torn in this position, so that this point could not be established; at all events the wall was much softened and very friable. From the abscess cavity on the right a sinus, large enough to admit the extreme tip of the little finger, passed upwards to the first dorsal vertebra. This sinus, which was apparently of some little standing, contained small flakes of necrosed bone. The body of the first dorsal vertebra was slightly necrosed and the bodies of the next four dorsal vertebræ were extensively carious, those of the third, fourth, and fifth having almost entirely disappeared; the process stopped at the upper part of the body of the sixth. The second to the sixth costal articulations on the right side and the third to the sixth on the left were also extensively eroded. There was recent fibrinous pleurisy over the posterior

surfaces of both lungs with recent adhesions on the right. The lower lobe of the right lung showed some collapse. No sign of tubercle was visible in either. The pericardium contained an excess of serous fluid. The heart and other viscera were normal and presented no evidence of tuberculosis. The stomach was filled with blood clot and the intestines contained a considerable quantity. There was no ulceration or other lesion of the stomach or intestines, so that it seems probable that the blood had tracked up from the aneurysm along the course of the pin and entered the alimentary canal at the perforation of the œsophagus. There was no sign of injury, either recent or old, on the palate or in the pharynx. The brain was normal and there was no meningitis.

The lesions of the spinal column gave every appearance of being of long standing and tuberculous in origin and the infiltration of the left lung from the suppurating gland and the sinus on the right side suggested that the process had not occurred merely a short time before death, as must have happened if the condition was due solely to perforation by the point of the pin. The clinical history that blood had only been vomited during the last two weeks and the fact that only the upper wall of the superior mesenteric artery had been pierced indicate that the pin had only recently reached the position in which it was found post mortem. Before this it must have been above the level of the suppuration and therefore not the cause of it. Tuberculous osteitis of the dorsal spine and the suppuration in the adjacent mediastinal gland were therefore probably antecedent to, and independent of, the perforation of the neighbouring part of the œsophagus by the pin. In all probability the point of the pin perforated the wall of the œsophagus, softened by suppuration from the spine, shortly before death.

As has been pointed out, the presence of the pin in the œsophagus was not suspected during life. It, however, appeared at the inquest that the mother believed that the child had swallowed a pin and indeed had mentioned her belief at another hospital, but not meeting with much sympathy there had refrained from saying anything about it at St. George's Hospital. The pin was evidently swallowed head downwards and its rounded end and the flexibility of its shaft must have enabled it to glide along the posterior wall of the pharynx into the œsophagus. In a very similar case recorded by Holding[1] a female child aged 20 months probably fell on the head-end of a hat pin which passed into the stomach and after being localised by skiagraphy was successfully removed by gastrostomy. It is noteworthy that in our case the pin had been in the œsophagus for over two months.

It may be added that during the last few years there have been at least ten other cases of foreign bodies, other than food, impacted in the œsophagus at St. George's Hospital—viz., four cases of tooth plates, of which three terminated fatally, one case of a pin which perforated the aorta and proved fatal (recorded by Sir Isambard Owen),[2] three cases of halfpennies, one case of a whistle, and one of a brooch, all swallowed by children and all treated successfully. For the two illustrations we are indebted to the skill of Mr. Lawrence Jones.

## MANDIBULAR PROCESSES ASSOCIATED WITH DOUBLE HARE-LIP AND CLEFT PALATE.

BY WALTER LEY WOOLLCOMBE, M.R.C.S. ENG., F.R.C.S. EDIN.,

SURGEON TO THE SOUTH DEVON AND EAST CORNWALL HOSPITAL.

Two children have recently been under my care for double hare-lip and cleft palate both of whom exhibited a peculiar deformity of the lower lip, which has been described and figured by Mr. J. Bland-Sutton[3] and others[4] and attributed by them to imperfect coalescence of the mandibular processes, but which I have never seen before in 18 years of hospital practice nor do many others seem to have described it.

[1] Annals of Surgery, Part cxli., September, 1904, p. 354.
[2] Brit. Med. Jour., vol. i., 1903, p. 1460.
[3] Tumours, Innocent and Malignant, 1901 edition, p. 362.
[4] Transactions of the Clinical Society, vol. xxiv., p. 230; Langenbeck's Archives, band xxxvii., p. 230.

CASE 1.—The patient was a boy, aged three months (sent by Mr. A. E. Gladstone of Newton Ferrers), whose father was born with hare-lip and cleft palate but who had two sisters without this deformity. The father and mother were not related. The boy had a complete cleft of the hard and soft palate and the worst looking hare-lip I have ever seen owing to the fact that the clefts on either side of the premaxilla were very wide and that the latter process was held forward by the vomer so that it stood out three-quarters of an inch in front of the rest of the upper lip. On the lower lip, which was perfect in outline, and at a distance of one centimetre on either side of the mid-line, were two depressions out of each of which protruded a nipple-shaped process about one centimetre in length which is diagrammatically represented in Fig. 1. These processes were capable of

FIG. 1.

Diagram of the everted lower lip, showing the mandibular processes and recesses.

a good deal of movement and several times per minute were protruded and retracted in a most uncanny way like feelers. The recesses were always full of mucus. The upper lip was treated by peeling back the periosteum from, and excising three-quarters of an inch of the central part of, the vomer, pressing the premaxilla back into the interval between the separated alveolar borders of the superior maxillæ, suturing it in place after freshening the opposing surfaces, then uniting flaps from the lips on either side, utilising the soft parts covering the premaxilla to fill in the central gap. The lower lip was subsequently treated by excising an elliptical portion of it, including the two recesses and tubercles, going deeply enough to remove all the glandular tissue connected with them.

CASE 2.—The patient was a boy, aged four months (sent by Mr. E. O. Kingdon of Holsworthy), who came of a healthy stock and had healthy brothers, no other member of the family showing any deformity. The condition was exactly similar to that in Case 1, except that the recesses and tubercles were much smaller and did not secrete nearly so much mucus.

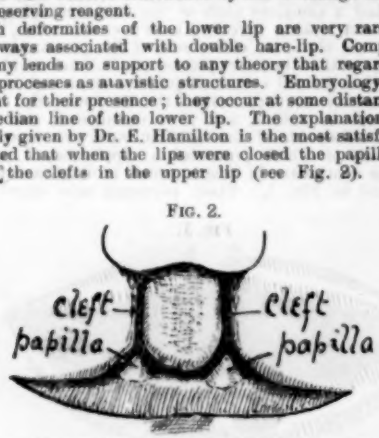
The facts that these recesses and processes have never been observed apart from double hare-lip—i.e., imperfect coalescence of the naso-frontal and maxillary processes—and also that Feurer once found a similar recess in the upper lip at the junction of these processes make it appear likely that the deformity is in some way connected with the intermandibular fissure, but this reasoning does not seem to me to explain satisfactorily the following points: (1) There are always a pair of recesses and they always seem to be situated at an equal and definite distance from the mid-line (about one centimetre); (2) there is never any irregularity in the line of the lip, which is perfectly united at the mid-line; and (3) the large amount of glandular tissue grouped around the recess.

The excised part of the lower lip bearing the two papilla processes was submitted for examination to Dr. Arthur Keith who reported as follows: "Each process is made of three elements: (1) a clump of mucous glands which forms the core: the ducts of these glands open close together near the apex of the process; (2) a layer of muscular tissue continuous with the orbicularis oris which surrounds the

glandular centre; (3) a covering of mucous membrane continuous with the mucous membrane of the lip. The depression described by Mr. Woollcombe as surrounding each process had become obliterated by the shrinkage caused by the preserving reagent.

Such deformities of the lower lip are very rare; they are always associated with double hare-lip. Comparative anatomy lends no support to any theory that regards these labial processes as atavistic structures. Embryology cannot account for their presence; they occur at some distance from the median line of the lower lip. The explanation of this anomaly given by Dr. E. Hamilton is the most satisfactory.[1] He noted that when the lips were closed the papillæ fitted within the clefts in the upper lip (see Fig. 2). During

FIG. 2.




Illustrating a condition similar to that in Case 1, described by Dr. E. Hamilton.

development the mucous surfaces of the lips are in contact; the developing tissue of the lower lip, lying opposite the clefts in the upper lip, is unrestrained in its growth and tends to fill the opposing gaps in the upper lip. On this interpretation the papillary processes represent attempts on the part of the lower lip to compensate for the defective development on the part of the upper."

Plymouth.

# A Mirror of HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.**

## UNIVERSITY COLLEGE HOSPITAL.

### A CASE OF SEVERE ULCERATIVE COLITIS; RECOVERY.

(Under the care of Dr. F. J. POYNTON.)

For the notes of the case we are indebted to Dr. A. J. Blaxland, house physician.

The patient, a man, aged 27 years, was admitted into University College Hospital on August 12th, 1904. The illness had commenced a month before this with severe abdominal pain and diarrhœa. The onset was sudden and in the first 24 hours he had noticed blood in the stools. Previously to the attack of pain the bowels had been loose for a week. The pain and diarrhœa persisted and as many as 20 stools were passed in the day, the great majority of which contained blood.

The condition on admission was extremely grave. The face was pinched and anxious, the eyes were sunken, the extremities were cold, and the voice was husky. The patient was greatly emaciated and over the sacrum there was a small bedsore. It was remarkable that although there was pain in the region of the colon, there was at no time any distension, the abdomen on the contrary being incurved. The temperature was 99·2° F., the respirations were 20, and the pulse was 96 to the minute. The tongue was dry and furred and the mucous membranes were anæmic. Nothing abnormal was discovered on examination of the abdomen but examination of the rectum through a speculum showed a polypoid condition of the mucous membrane and some superficial ulceration. The stools were offensive and were composed almost entirely of blood and mucus. From time to time small sloughs were visible. The blood was sometimes bright red and sometimes darker. During the first three days in the hospital from 17 to 21 stools were passed in the day.

The following treatment was adopted in addition to the most careful and skilful nursing. The patient was placed on a strictly milk diet. Bismuth carbonate in 30-grain doses combined with 15 minims of tincture of opium were given by the mouth every four hours. Rectal injections of a solution of silver nitrate (15 grains to the pint of distilled water) were administered every night. Two pints were injected very slowly through a long soft tube and funnel and when these were returned an enema of sodium chloride solution was given. Although administered with the utmost care these injections caused considerable pain. Progress was immediate. The pain was eased by the opium and the patient gained some rest between the actions of the bowels and more tranquillity throughout the day. In three days the number of motions was reduced to seven in the 24 hours and after a week to five. The mucus in them decreased and the offensive odour was diminished. Blood was still present in every motion but there was a distinct gain in the strength of the patient. The bismuth and opium, too, were exerting a good effect on the diarrhœa. This was shown by the fact that it was thought advisable at the end of the first week to stop the injections for some days. There was then no marked increase of the diarrhœa, although the motions became more offensive and unhealthy. The treatment was with this exception continued for seven weeks and during that time the condition of the patient improved very greatly. By that time the motions were diminished to three per diem and they were beginning to be formed, although even now there was occasionally a considerable amount of blood passed. At this date the discomfort produced by the injections—the patient himself being, as is so often the case with abdominal maladies, inclined to be depressed and unhappy—caused them to be left off again. In less than a week the motions became more unhealthy and contained a quantity of mucus and, what was even more convincing, the patient's face became pinched and drawn; there was also some little pyrexia. Accordingly the injections were resumed every other day and then on Oct. 13th were given every third day. From Oct. 6th to 30th his weight increased from 7 stones 5 pounds to 8 stones 6 pounds. When he left the hospital at the end of the month he was quite convalescent, and after a month at the seaside he returned weighing 9 stones 6 pounds and with the bowels acting naturally once a day.

*Remarks by* Dr. POYNTON.—This case is sent for publication because the result after the treatment was most striking and most encouraging in a condition that is admittedly one of the greatest gravity. It must be acknowledged that the administration of injections of some bulk in cases of ulceration of the bowel is always an anxious and hazardous undertaking, for it is not possible from clinical evidence to say how deeply one of the ulcers may have extended, but there can be no doubt in this case that a few more days without some improvement would have ended the patient's life. The case was one of an exceedingly severe type and the recovery was more complete than even the most sanguine could have expected.

## HARROGATE INFIRMARY.

### A CASE OF RUPTURED TUBAL GESTATION; OPERATION; RECOVERY.

(Under the care of Mr. ERNEST SOLLY.)

THE patient was a married woman, aged 38 years, who had had two children (now aged 17 years and four years respectively). The general health had been good and with the exception of a "slight miscarriage" three years after the birth of the first child and a certain amount of leucorrhœal discharge at times ever since—never enough to cause obvious effect upon the health or even to be considered worth noticing—there were no symptoms of disease of the pelvic organs. On Oct. 27th, 1904, the patient thought that she had another "slight miscarriage," as her period was a week or ten days overdue and there was some uterine hæmorrhage, dark in colour and with some clots. There was no pain or other disturbance and the patient kept about doing her housework. On the 30th, about 6 P.M., while pouring out tea, she felt a violent pain in the abdomen, mostly "low down," but also

[1] See Ballantyne's Antenatal Pathology, vol. ii., p. 397, 1904.

across the epigastric region and soon after this she was sick. She went to bed but the pain and sickness remained, although the former was relieved to some extent by small doses of morphine administered by Mr. J. G. Christian who was called in to see her about 7 P.M. All symptoms became steadily worse through the night and the next day and about 7 P.M. on the 31st Mr. Solly was asked to see her by Mr. Christian. She was found to be collapsed and almost pulseless but the beats were able to be counted as about 90. The abdomen was distended and tender, especially in the hypogastric region, where there was some dulness. The liver dulness was not affected. Tenderness was certainly more marked in the right hypogastric region but as the patient was somewhat under the influence of morphine it could not be definitely localised. All circumstances made operation inadvisable in her own house so she was taken in a wheeled ambulance litter to the infirmary and on arrival there received ten minims of liquor strychninæ hypodermically and one ounce of brandy diluted to three ounces into the rectum. Mr. Solly opened the abdomen at about 8.30 P.M. by median incision below the umbilicus. There was free discharge of blood, both liquid and in clots (of the latter a 20-ounce measureful was easily collected), and some shreds of membrane were recognised. About half an inch from the uterine end of the right Fallopian tube was a swelling about one inch in diameter with a ragged rent on its upper surface; inside were some more shreds of fœtal membranes. The sac and the rest of the right Fallopian tube and the ovary were removed after the passing of ligatures of silkworm gut. The abdominal cavity was as far as possible cleansed from clots and blood, sterilised normal saline solution (about four pints) being used for flushing out the abdominal cavity. The peritoneum was closed by a continuous catgut suture, a glass drainage-tube being left leading down to the pelvis, and the external wound was closed by interrupted sutures of silkworm gut. The patient's condition was critical throughout and during the operation about one and a half pints of normal saline solution were introduced under the pectoral fascia. During the night three ounces of saline solution were injected per rectum—at midnight, at 4 A.M., and at 8 A.M., and nutrient enemata alternately with these. These injections were continued alternately during the next 24 hours, after which feeding by the mouth was commenced. Recovery was uninterrupted and uneventful. The glass drainage-tube was removed on the third day and all sutures on the seventh day as the wound healed by first intention. The patient was kept in bed for a month to avoid risk of embolism from detachment of possible clots in the veins but she left the infirmary perfectly well on Dec. 8th and has remained well. Although still pale she is said not to be much paler than before and she is quite able to attend to ordinary household duties.

*Remarks by* Mr. SOLLY.—Successful cases of operation for the above condition, even when the patient has been apparently moribund, are fortunately becoming more frequent than they used to be but I think the case recorded above, in addition to its own points of interest, is worthy of publication as a further encouragement towards radical treatment of such emergencies however hopeless it may seem to expect success.

# Medical Societies.

## PATHOLOGICAL SOCIETY OF LONDON.

*Some Observations on Pancreatic Secretion in Man.*

A LABORATORY meeting of this society was held on Feb. 7th at St. Mary's Hospital Medical School, Dr. A. E. WRIGHT being in the chair.

Mr. W. H. CLAYTON-GREENE (introduced by Dr. WRIGHT) read a paper on Pancreatic Secretion in Man. The paper started with a brief description of a case of carcinoma of the pyloric end of the stomach. The patient, a man, aged 49 years, was admitted to St. Mary's Hospital in April, 1904, suffering from pyloric obstruction. A large mass was detected on abdominal palpation and laparotomy was performed on April 13th. The carcinomatous mass was found to involve a considerable amount of the lesser curvature of the stomach and to be slightly fixed to the posterior abdominal wall. The fixation appeared to have been produced by inflammatory adhesions. As the age of the patient and the state of the growth seemed to justify a radical operation it was decided to perform pylorectomy. This was accordingly done but in the separation of the malignant mass from its posterior relations a portion of the pancreas was torn and ligatured. The duodenum was joined to the cut edge of the stomach. The patient rallied well and went on favourably at first. On the 16th a certain amount of fluid was found to be escaping along a drainage track left in the abdominal wound. The fluid was alkaline. Methylene blue was given by the mouth to make certain that there was no gastric or duodenal leakage but no coloured fluid escaped, showing that the suture line was intact. The fluid from the fistula was carefully analysed by Dr. W. H. Willcox who found that it contained an amylolytic and a proteolytic ferment, both of which acted only in alkaline solution. Control experiments gave negative results. It was evident, therefore, that a pancreatic fistula had formed and it was decided that the effect of food on the secretion should be studied. Food, beef-tea, &c., were given by the mouth and some few seconds after they had been swallowed there was a definite secretion of pancreatic juice. The sight of food had a precisely similar effect, comparable in every way to that obtained when the salivary or gastric glands were similarly stimulated. The observations extended over some ten days, after which the patient became worse and died. Post mortem the pancreas was in a state of general suppuration but there was no fat necrosis. The evidence of this case supported Pawlow's original theory that pancreatic secretion was influenced by a nervous mechanism. The conditions under which the flow of pancreatic juice started were such that it could not be explained as the result of the formation and absorption of secretin. The work of Starling and Bayliss was conclusive as to the value of the intestinal contents—prosecretin and secretin—in maintaining a pancreatic flow but in this case there was support for the theory that stimulation of a sensory nerve could evoke a secretion here as in the case of the salivary glands.

## OBSTETRICAL SOCIETY OF LONDON.

*Vaginal Cystocele.—Exhibition of Specimens.—Presidential Address.*

THE annual meeting of this society was held on Feb. 1st, Dr. EDWARD MALINS, the President, being in the chair.

Dr. E. W. HEY GROVES read a paper entitled "A New Operation for the Cure of Vaginal Cystocele." After pointing out that the condition was one of hernia of the bladder through the interval between the levatores ani he proceeded to describe the anatomy of these muscles and to show how they formed the floor of the pelvis through the median gap in which the urethra and the vagina passed. Cystocele was accompanied by a divarication of the adjacent edges of the levatores ani. Dr. Groves suggested that the unsatisfactory results of all operations hitherto performed for this condition depended on the fact that they relied solely on the removal of the vaginal wall. He proposed, therefore, the following operation. A transverse incision through the vaginal wall was made three centimetres behind the urethral orifice. The vagina was separated from the urethra and the bladder and the inner edges of the levatores ani were defined in each angle of the wound. The muscles were drawn together and stitched by two rows of suture. The vagina was united in the line of the original incision. The first case in which he had performed the operation occurred two years ago; the patient had since borne a full-term child and the cystocele showed no signs of recurrence. The patient's age was 35 years but he anticipated that the operation would be even more serviceable in old women because in them the levatores ani could be stitched together for a greater extent regardless of encroachment on the vaginal outlet. He had not found any difficulty in separating the anterior vaginal wall from the urethra and the bladder.—Dr. C. J. CULLINGWORTH said that the principles upon which the operation was based appeared to be sound but he was inclined to think that at the age when relief was usually sought it would not be easy to find the separated borders of the levatores ani.

Dr. FRANK E. TAYLOR showed a Wandering Spleen which had simulated an ovarian tumour, had caused retroversion of the uterus, and had been removed by operation. It was completely contained within the pelvis and so had not given

rise to any abdominal enlargement. The patient was a married nullipara, aged 29 years.—The PRESIDENT said that in the case of a patient whom he had seen some years ago with Sir Spencer Wells a diagnosis of ovarian cystic tumour was made but on operation it turned out to be a much enlarged spleen. He remembered a similar case of a spleen mistaken for ovarian tumour, where the spleen was much displaced and the pedicle axially rotated. He removed it with complete success.—Dr. HEYWOOD SMITH said that a similar case was sent to him as one of ovarian tumour. He made out that the tumour was a spleen displaced. Mr. J. Bland-Sutton removed it at his request. The patient recovered.

Mr. BLAND-SUTTON showed a specimen of Tuberculous Disease of the Body of the Uterus (probably primary). It had been removed by abdominal hysterectomy from a spinster, aged 46 years, who had suffered from menorrhagia for two years. A rounded body inseparable from the uterus could be felt in the hypogastrium. On opening the uterus a rounded sessile non-encapsuled tumour was found growing from the endometrium of the anterior wall. On section the tumour showed patches of caseation and on microscopic examination tubercle bacilli were seen. The most important clinical feature of the case was its similarity to a degenerating submucous fibroid.—Dr. P. HORROCKS said that he had seen several cases of tubercle of the lining membrane of the uterus but in all the cases the endometrium of the cervical canal and of the corporeal portion was affected. The clinical features more resembled cancer than fibroid.

The PRESIDENT delivered the Annual Address.

The following list of officers for 1905 was read:—President: Dr. W. R. Dakin. Vice-Presidents: Dr. A. H. Freeland Barbour (Edinburgh), Dr. Amand J. M. Routh, Sir William Japp Sinclair (Manchester), and Mr. Albert C. Butler-Smythe. Treasurer: Dr. George Ernest Herman. Chairman of the Board for the Examination of Midwives: Dr. John Phillips. Editor of the Transactions: Dr. Herbert R. Spencer. Honorary secretaries: Dr. Montagu Handfield-Jones and Dr. Robert Boxall. Honorary librarian: Dr. Arthur H. N. Lewers.

## OPHTHALMOLOGICAL SOCIETY.

*Malignant Disease of the Conjunctiva.—The Treatment of Corneal Ulcers by Quinine.—The Notation of Prisms.—Detachment of Retina.—Neuro-retinitis.—Exhibition of Cases and Specimens.*

AN ordinary meeting of this society was held on Jan. 26th, Mr. JOHN TWEEDY, the President, being in the chair.

Dr. A. FREELAND FERGUS, in a paper read in his absence by Dr. F. R. HILL, related a case of Malignant Disease of the Conjunctiva. The patient was a girl, aged nine years, who was sent to him by Dr. Hill in November, 1903. On the lower part of the bulbar conjunctiva were some sprouting vegetations, with an appearance not unlike that seen in spring catarrh. The limbus and palpebral conjunctiva were unaffected. It had first been noted six months previously. The vision was $\frac{6}{9}$ and a portion was removed for examination. The pathological report was indefinite. Shortly after the rest was removed and the patient was sent back to Carlisle under Dr. Hill's care. The pathological reports of Professor R. Muir and Mr. C. Devereux Marshall showed the growth to be of an unusual character, probably a sarcoma, but its appearance left no doubt as to its being malignant. On March 21st, owing to its rapid extension, the whole contents of the orbit were removed and the patient was sent back on April 14th. On May 23rd she was again seen but the recurrence was so extensive that no operation was possible. The neighbouring glands were also involved and even at this time there were cerebral symptoms. The child died in October with the tumour of enormous size. The post-mortem examination showed extensive involvement of the brain. The growth was apparently a leuko-sarcoma.—Mr. J. H. PARSONS, who had examined the growth, said it appeared to him to be one of those rare cases of nævus or mole taking on malignant growth and he looked upon it as being probably an epithelial growth rather than a connective tissue one.

Mr. ARNOLD LAWSON read a paper on the Treatment of Corneal Ulcers by Quinine. He said that up to the present time the use of quinine in ophthalmology had been restricted to a very limited class of conjunctival and corneal affections but his observations, which had extended over four years, showed that it was a very powerful curative agent in a large variety of corneal ulcers not amenable to ordinary routine treatment, to which much more drastic measures were commonly applied. The sulphate of quinine dissolved carefully in just sufficient sulphuric acid to hold the salt in solution was recommended to be used in a 1 per cent. solution. The eyes should be soaked in the solution for five minutes four or five times a day and in addition a thorough irrigation daily by an undine filled with the solution was advised. It caused very little discomfort and patients used it readily but stronger solutions gave rise to pain and had no advantage. When the treatment was going to be successful improvement showed itself within a few days and if no manifest benefit was effected within a week it might be discontinued. The rapidity of healing under this treatment was at times remarkable and Mr. Lawson had seen many formidable looking ulcers heal by this treatment alone within a week. A list of several cases of corneal ulceration treated by this method within the last three years was appended to the paper.

Mr. CLAUD A. WORTH read a paper on the Notation of Prisms. He said that when they ordered a spherical or cylindrical lens they did not concern themselves with the refractive index of the glass of which it was made. They specified that it should have a certain definite effect upon a pencil of light and bring it to a focus at a certain specified distance. But prisms were numbered by most opticians according to the geometrical angle, so that if they wanted a prism which should deflect a pencil of light say four degrees they had to order a prism of eight degrees geometrical angle. The optician then supplied a prism the actual deflecting power of which was somewhere between three degrees and five degrees, according to the kind of glass of which it was made. It was much more convenient and accurate to number a prism according to the number of degrees which it deflected a pencil of light. Although this matter had been discussed before, yet he brought it forward in the hope that the society would make some definite pronouncement which would be accepted by spectacle makers in this country and inconvenience would thus be avoided.

Dr. D. J. WOOD (Cape Town), after referring to a case of Detachment of the Retina recorded by him in vol. xii. of the Transactions, described another case which he had recently seen which bore a strong likeness to the previous one. The patient was a Dutchman, aged 35 years, whose right eye had been lost five years before from perforating ulcer and the eye had been removed. Since that time the sight of the left had been failing but had rapidly deteriorated during the last five weeks. His vision was perception of light and he could just see large objects moving below. The pupil was active and the tension was normal. The ophthalmoscope showed two rounded detachments meeting and widening out above. The vitreous was clear. The vessels were more than double their natural size and were tortuous to a degree. Both arteries were constricted at frequent intervals, so that they looked like beads, while the veins had the appearance of strings of sausages. The constricting bands were retinal in origin and looked as if they were stitches holding the vessels down. In both cases it was difficult to follow the vessels, not only on account of the tortuosity, but also because the colour of the arteries and veins was so similar. There were no recent hæmorrhages but some patches that were seen probably represented old ones. The question was whether it was a proliferation of inflammatory material in the retina or a primary disease of the vessels. Probably serous exudation caused detachment of the retina but it was difficult to account for the lightness of colour of the veins which were seen in both cases.

Mr. LOUIS WERNER showed a sketch of a case of Neuro-retinitis of a severe type which occurred in one eye of an anæmic girl, aged 24 years. There was neither headache nor vomiting, the only symptom being a feeling of lassitude and for a time excessive thirst. There was no albumin present but the sugar reaction was doubtful. The left eye failed suddenly one morning and the vision was reduced to perception of movements of the hand. The field of vision was greatly contracted but the colour perception was good. The upper part of the disc was greatly swollen with large corkscrew-like vessels spreading out from it, while the lower part was white and atrophic but indistinct. In less than

three days a perfect star of white lines appeared at the macula. Under iron the swelling disappeared in three months and the vision improved to $\frac{6}{12}$. Dr. Werner referred to a case reported by Sir W. R. Gowers in which retinal changes resembling those of albuminuric retinitis occurred in a chlorotic patient.

The following case and specimens were exhibited:—

Dr. L. COLE-BAKER showed a Needle Holder for use with either straight or curved needles and a modification of Clark's Eye Speculum.

Mr. N. BISHOP HARMAN showed a case in which there was Congenital Absence of the Internal and External Rectus Muscles.

Mr. H. SECKER WALKER showed a radiograph of a case of Gunshot Wound in which two shots had entered the eye at the same hole and had lodged at the back of the orbit.

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BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The general meeting of this society was held on Jan. 13th in the rooms of the Medical Society, Mr. W. J. Chichele Nourse, the President, being in the chair.—Dr. J. Sim Wallace read a paper on Nasal Obstruction and Mouth Breathing.—The President then delivered his address, of which the following is a *résumé*. Having suitably acknowledged the honour conferred upon him the President referred to the former and the present work of the association. He then alluded to the approaching celebration of the 100th anniversary of the birth of Señor Manuel Garcia, the inventor of the laryngoscope. The rest of the address was devoted to the subject of Reason in Relation to Scientific Medicine. The President pointed out the impossibility of arriving at truth except by the aid of the recognised rules of reason, for knowledge, he said, consisted of conclusions drawn by reason from the consideration of facts. As, on the one hand, records of facts alone did not constitute science, so, on the other, the exercise of reason without regard to facts, as practised in the mediæval universities, was equally barren. The principles of medicine were thus built upon accumulated records of facts by the methods of inductive reason, while the application of those principles to individual instances in the practice of the healing art was also dependent upon sound logic. He then dwelt shortly upon the close connexion between reason and literary composition and concluded as follows: "Such reflections, I venture to think, gentlemen, are not inappropriate in this place and on an occasion like the present. The object of this association, stated in our constitution, is 'the advancement and diffusion of knowledge in all that relates to diseases of the throat, nose, and ear.' We are not merely students but professedly teachers of these subjects. We teach, in the first place, by learning ourselves. But, besides this, some of us are actually called upon to impart what we know to students in the course of hospital work. It is our bounden duty, therefore, to test and to re-test the truth of our beliefs before imparting them to others. Accurate and unbiased observation must be wedded to sound reason."—A vote of thanks was moved by Mr. St. George C. Reid, seconded by Mr. E. Dennis Vinrace, and carried unanimously.—A number of clinical cases were then shown, each case being followed by a discussion dealing with its nature, treatment, and the like. Among these cases were: a case of Nasal Polypus with Deformity, shown by Dr. W. H. Kelson; a case of Ulceration of the Palate for diagnosis, shown by Dr. V. H. Wyatt Wingrave; and a case of Tertiary Syphilis of the Nose with Epiphora, shown by Dr. D. Mackenzie.—The President showed a case of Fracture of the Larynx in a man aged 65 years. He remarked that there was still some external deformity. The accident occurred on Nov. 23rd, or about seven weeks ago, so that there had been time for considerable repair to take place. Dr. Johnstone, who first saw the patient soon after the accident, detected crepitus quite easily. When the patient first came under his own notice crepitus could still be distinctly elicited. Moreover, an examination by the laryngoscope showed that the left cord was not only abducted but appeared to be distorted; it seemed as if the hinder end was pushed further outwards than it ought to be. He based his diagnosis upon the external deformity, the immobility of the cord, the crepitation, and the great extravasation in the laryngeal tissues. No doubt it was a case of simple and not of compound fracture. Hence the absence of emphysema. The mortality in recorded cases was very high. Out of 69 cases of fracture of the larynx collected by Durham in his article in Holmes's "System of Surgery" there were 53 deaths. 30 cases were of fracture of the thyroid cartilage, of which 20 were fatal. Almost all cases of which he had found records were compound fractures and it seemed as if this was one of the elements which produced the high mortality. Some were the result of great violence and were attended by other injuries. The œdema of the cords was an interesting point. There was no doubt that the cords were very much swollen and infiltrated with fluid, particularly the left cord which was whitish and translucent. Shortly before the œdema and the extravasation disappeared the colour of the effused fluid became yellowish as if it was tinged with blood pigment.—Dr. C. O. Hawthorne, in view of the infrequency of fracture of the larynx, thought it might be of interest to draw attention to a case which had been recorded by Dr. G. S. Middleton of Glasgow[1] and which had for its clinical features two symptoms only—namely, hæmoptysis and subcutaneous emphysema. The patient was a man, aged 70 years, who, on rising from bed, slipped and in falling struck the right side of his head against the kitchen dresser. He regarded the blow as entirely a trivial affair but shortly afterwards brought up about two teacupfuls of bright red blood. In the course of a few minutes he was conscious of swelling of his neck and of some difficulty of breathing. He was then taken to hospital and admitted to a medical ward. Examination showed considerable subcutaneous emphysema of the face and the neck and this rapidly extended so as to involve the whole of the trunk. There were urgent dyspnœa and cyanosis and it was impossible to obtain a view of the interior of the larynx but externally there was no evidence of injury. Several surgeons who saw the case thought that the condition was due to fracture of one or more ribs with tearing of the lung substance, though no conclusive evidence in favour of this view could be obtained. The patient died four days after admission. At the necropsy there was discovered below the left vocal cord a cavity having a necrotic wall and leading to a necrosed thyroid cartilage. It was by this avenue that air had reached the subcutaneous tissue. The appearances were not those of syphilis, tubercle, or malignant disease and it was suggested that some small foreign body might have been responsible for the ulceration and necrosis, though no such body was discovered. The patient had never made any complaint of symptoms suggestive of laryngeal disease and until the date of the hæmoptysis his friends had regarded him as a man in exceptionally good health. Such a record might be said to have a special interest to members of that association, but, in addition, it aptly illustrated the necessity of keeping a wide outlook in whatever branch of practice a medical man might elect to engage. It showed how a case which was essentially one of local disease in the larynx might present clinical features which brought it under the care of the general physician. Specialism in some measure was, no doubt, a necessity but to be conducted in harmony with the claims of sound practice it must maintain the wider outlook which had been defined in the President's thoughtful and earnest address. However severely the practitioner might restrict the line of his practice he could not absolve himself from a responsibility which included the entire welfare of the patient.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Feb. 2nd, Dr. James Barr, the President, being in the chair.—Mr. F. T. Paul exhibited a patient suffering from Popliteal Aneurysmal Varix which had resulted from a bullet wound.—Dr. M. Loewenthal demonstrated a specimen of Bothriocephalus Latus and mentioned the treatment he had adopted in the case from which it was obtained.—Mr. Paul read a note on Enterectomy for Cancer of the Colon. Three recent cases were mentioned and the portions of the bowel removed were exhibited. Especial attention was directed to the importance and difficulty in making an early diagnosis, many cases of cancer of the cæcum being confounded with appendicitis. As regards malignancy these cases gave the best permanent results in the surgical treatment of cancer and as regards the dangers of the operation he had not lost a single case, except when intestinal obstruction was present, since he had brought the ends of the bowel outside at the time of the operation. He would very much like to know what the real mortality was after primary end-to-end anastomosis of the large bowel.

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[1] Clinical Records from the Glasgow Royal Infirmary, Alex. Macdougall, Glasgow, 1894.

As a palliative operation he advised short-circuiting whenever it was possible rather than performing colotomy.—Mr. W. Thelwall Thomas had taken advantage of the method of operating described by Mr. Paul in several cases of colectomy and considered it a valuable advance. Cases being so often seen when marked obstruction had supervened he had found it impossible to unite the dilated proximal end of the divided gut to the atrophied and collapsed peripheral portion. —Mr. E. M. Stockdale, Mr. G. P. Newbolt, Dr. J. Hill Abram, Dr. G. C. Walker, Dr. W. Blair Bell, Dr. W. Carter, Dr. R. Humphreys, and the President also took part in the discussion.—Mr. T. C. Litler Jones related a case of Acute Hæmorrhagic Pancreatitis. The patient was a healthy woman, 26 years of age, subject to constipation. She was suddenly seized with severe abdominal pain and vomiting 46 hours before admission to hospital. Laparotomy was performed and there were found to be fat necrosis and about three pints of blood serum in the peritoneal cavity. This fluid was removed and the pancreas was incised in its long axis with a view to prevent further tissue necrosis due to the action of the ferment. The incision in the pancreas was packed with gauze which was removed 36 hours later. Except for some trouble with the abdominal incision owing to the digestive action of the pancreatic discharge the patient made an uninterrupted recovery.—Dr. W. B. Warrington read a paper on Compression Paraplegia with especial reference to Tumour of the Spinal Cord, and an account of a case of Endothelioma removed from the Cauda Equina. He pointed out that in any case of paraplegia the possibility of compression of the cord was to be considered. Tumours of the spinal cord were about ten times less frequent than cerebral tumours, but about half could be successfully removed, as against 4 per cent. of cases of cerebral tumour. The symptoms were progressive pain, motor paralysis, and sensory paralysis The clinical picture of a total block of conduction between the cord and the brain was described and reference was made to the splanchnic and somatic symptoms in these cases. Cases were then quoted to show that this "block" might be physiological and remediable, calling in selected cases for operative interference. In the case of the patient with a tumour of the cauda equina there were symptoms of symmetrical affection of the sacral roots—pain, paralysis of the muscles moving the feet, loss of sensation in all the sacral and last lumbar area, disturbance of the bladder and rectum and loss of the bulbo- and ischio-cavernosi reflex. The tumour, which was removed by Mr. R. W. Murray, proved to be a malignant endothelioma and though marked relief occurred for some months the symptoms then reappeared and the case could only end fatally. The importance of differential diagnosis between lesions of the last part of the cord (conus medullaris) and the cauda equina was emphasised as in the latter case the surgeon often could operate satisfactorily. A brief account of the diagnostic features of the different lesions and their distinction from each other was given. In many cases of nervous disease the coöperation of physician and surgeon was most desirable.—The President, Professor C. S. Sherrington, Mr. Damer Harrisson, Dr. Nathan Raw, Mr. Murray, and Dr. Hill Abram took part in the discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 27th, Dr. A. Bronner being in the chair.—Dr. J. B. Hellier read a paper on Secondary Post-partum Hæmorrhage and described a recent case. The patient was a young married woman who was treated for partial placenta prævia at the seventh month by podalic version. For ten days she progressed without a bad symptom, there being no sign of sepsis and no lochial excess. On the tenth day she had a very severe flooding. This recurred on the seventeenth day after a further interval in which no bad symptoms were present. There was no further hæmorrhage and she made a good recovery. It is certain that no part of the secundines were retained in this case. Dr. Hellier discussed at length the causation and the treatment of this condition —Dr. A. G. Barrs, Dr. J. E. Eddison, Dr. H. Johnstone Campbell, and others took part in the subsequent discussion.—Mr. H. Collinson made some remarks on a case of Fibroid Polypus of the Bladder. The patient, a man, aged 33 years, was admitted to hospital, under the care of Mr. H. Littlewood, in a semi-conscious condition with dribbling of foul, blood-stained urine. He had suffered from occasional hæmaturia for 12 months and from great frequency of micturition and pain at the end of the penis for the last nine months. He died on the fifth day after admission from septic pyelonephritis. The necropsy showed a polypus of the bladder two inches in length springing from the upper and outer margin of the right ureteral orifice. This had obstructed the flow of urine from the right ureter, producing dilatation of it and the pelvis of the kidney. The tip of the polypus also obstructed the internal meatus of the urethra. Attention was drawn to the prominence, amongst the symptoms, of pain and frequency of micturition, and the physical characteristics of the tumour were cited as explanation.—Mr. Littlewood discussed the paper.—Dr. Campbell referred to the fact that in recent years the mortality from croupous pneumonia had not only shown no signs of diminution but had on the other hand considerably increased, in spite of the advance that had been made in the treatment and in the case-mortality of most other diseases. He insisted upon the necessity, in the matter of treatment, of recognising that pneumonia is a general disease with a local manifestation and said that he considered that the main indications were to take off pressure upon the heart and to lessen the work that it had to perform rather than by stimulating it to try to increase its motive power, to keep the kidneys well flushed by the administration of plenty of water, and to avoid overloading the stomach with food. He deprecated the routine use of drugs like digitalis and strychnine and recommended the use of potassium iodide as a vaso-dilator and in suitable cases creasote to prevent fermentation in, and consequent distension of, the stomach. He further dwelt upon the necessity of avoiding any disturbance of the patient that could possibly be avoided and especially thought that examination of the lung should be made to the smallest possible extent when once the diagnosis had been established. —Dr. Barrs and Dr. Eddison discussed the paper and Dr. Campbell replied.—Various cases and pathological specimens were shown by Mr. A. L. Whitehead, Dr. BARRS, Dr. T. Churton, Mr. E. Ward, Mr. W. H. Brown, Dr. C. M. Chadwick, Dr. Hellier, Dr. E. F. Trevelyan, Mr. Littlewood, Dr. Carlton Oldfield, Mr. G. Constable Hayes, Dr. T. Wardrop Griffith, and Mr. R. Lawford Knaggs.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held at Birmingham on Feb. 1st, Dr. E. W. Wood White, the President, being in the chair.—Dr. J. G. Emanuel showed a case of Spina Bifida Occulta in a child, aged two years. In the dorsi-lumbar region of the spine there was a diffuse overgrowth of long hair. The vertebræ covered by this hair seemed in no way defective but lower down the spine at the juncture of the coccyx with the sacrum there was evidence of incomplete closure of the primitive medullary groove in the form of a well marked dimple in the middle line. The child, otherwise perfectly well developed, suffered from incontinence of urine but this was held not to point to any defect in the cord, as there were no other signs such as talipes, altered knee-jerks, &c.—Mr. George Heaton showed a Sarcoma of the Epididymis removed from a man, aged 28 years, who had noticed a tumour at the back of the right testicle for eight weeks. It increased rapidly in size at first but latterly had not enlarged much. The testis could be felt in front of the lower part of the swelling. The tumour on removal was of about the size of a large orange. The testis, normal in size and appearance, was situated at the front part and not involved in the growth. There was no enlargement of the vas deferens or other constituents of the cord. Microscopically the tumour was a mixed round-celled and spindle celled sarcoma.—Dr. A. Stanley Barnes showed specimens from a case of Cerebral Tumour in which there was secondary growth in the spinal pia mater. The patient was a boy, 11 years of age, who two years previously had suffered from morning vomiting, slight headache, and progressive loss of sight. After an illness lasting about six weeks all the symptoms abated and his eyesight improved so far that he was able to read large print. The symptoms recurred two months before admission to the Queen's Hospital, the patient having been practically well during the interval. In hospital he grew gradually worse, his main symptoms being headache, vomiting, loss of sight (due to post-neuritic atrophy), wasting, and convulsions. All the reflexes were lost several weeks before death. Post mortem there was found a large sarcoma of the frontal lobe, apparently growing from the ependyma of the anterior cornu of the lateral ventricle. The floor of the fourth ventricle and parts of the other ventricles showed secondary growths and at the base of the brain and

around the spinal cord the pia mater (and to a less extent the arachnoid) were enormously thickened to form an almost continuous mass of sarcomatous growth, constituting a sheath for the spinal cord. The posterior root ganglia and some of the roots of the cauda equina were greatly enlarged by growth. The secondary affection of the ventricular walls and pia mater probably occurred as a result of rupture of the tumour.—Dr. J. Douglas Stanley read a paper on Syphilitic Disease of Some Viscera.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 10th, Dr. E. S. Reynolds, the President, being in the chair.—Mr. E. Stanmore Bishop read a paper on the Surgical Aspect of Biliary Calculi, illustrated by means of patients and specimens. The progress of abdominal surgery, he said, had been great since asepsis had permitted surgeons to substitute ante-mortem for post-mortem examinations of the viscera therein contained and both diagnosis and treatment of biliary calculi had shared in the general advance. The diagnosis of these conditions had become much clearer since greater emphasis had been laid upon the fact that gall-stones as such had no existence for the surgeon. It was only when associated with inflammatory conditions in the channels containing them that they became appreciable both by the patient and the surgeon. Just in the same way the stercoliths in an appendix had no pathological significance until associated with some inflammatory change in the appendix itself. Such a combination necessitated the existence of certain symptoms which were pathognomonic: rise of temperature in a certain manner—the steeple chart of Moynihan and the cholangic angle of Murphy; pain of a definite kind and radiation in a definite way followed by tenderness of the affected region, appreciable by Murphy's test, and certain reflexes. Murphy's test was described. In regard to treatment, the advances in technique were illustrated by the different operations practised in 22 cases and their results. The necessity of at least temporary drainage in all cases was shown to be a consequence of the conditions present. Operation *à deux temps*, as formerly practised by himself in common with other operators, was shown to be wrong in principle and the difficulties necessarily dependent upon such a method were illustrated by cases. Preliminary dosing with calcium chloride after the method of Robson was strongly supported by his experience. The patient separation and ligature of all adhesions before any attempt at removal of calculi were emphasised. Various methods of drainage were discussed. The two main incisions of Robson and Rutherford Morison were described and illustrated by cases in which they had been used. Amongst the patients shown was one in whom operation had been carried out at the fifth month of pregnancy without disturbance and the child born at full term was also shown. Mr. Stanmore Bishop expressed his obligation to Dr. R. A. Paton of Harpurhey and to Mr. Harold J. Moon of Levenshulme, by whose courtesy these patients were shown.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. W. Pooley, the President, being in the chair.—Mr. R. Burdett Sellers opened a discussion on Ambulance Work and its Relation to General Practitioners. After a historical survey of the origin and subsequent development of the ambulance movement Mr. Sellers described the objects kept in view by the St. John Ambulance Association, emphasising the fact that in case of accident the aim was not to supplant the medical man but to prevent death and to minimise suffering pending his arrival. Mr. Sellers described several typical cases in which he claimed that lives had been saved by ambulance men. He also cited the testimony of army surgeons and distinguished medical civilians in favour of ambulance work during the recent Boer war and elsewhere.—Dr. A. Wallace believed that ambulance work did some good but thought that the instructors should be paid by the State.—Mr. S. T. Lord insisted on the amount of good done by ambulance men and also on the opportunity given to the lecturers to expose quackery.—Mr. W. Stanwell admitted the value of ambulance work but pointed out that there were cases of ambulance men exceeding the limits laid down by Mr. Sellers.—Dr. J. A. Ashcroft did not understand the opposition to ambulance work.—Mr. H. H. I. Hitchen disapproved of the movement while admitting that it did a certain amount of good. His disapproval was due to the conduct of ambulance men, one of whom, e.g., after treating an obvious fracture for some time as a sprain, disputed his (the speaker's) diagnosis of the condition.—The President said the reason of the approval of the army surgeons was obvious. The ambulance brigade provided them with more or less trained assistance in time of war, when the army medical staff was insufficient for the work that it had to do. He disapproved of the ambulance movement and thought that many cases which received first aid would be better if left alone until the medical man arrived.—Mr. Sellers, in reply, repeated his main contention that the chief advantage of ambulance work was that it lessened loss of life and suffering.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. G. Morgan, the President, being in the chair.—Mr. R. F. Jowers showed a Renal and a Ureteral Calculus which he had removed, together with a large hydronephrotic kidney, from a woman who made a good recovery. The renal calculus weighed seven drachms; the ureteral one, which weighed half an ounce, was situated at the lower end of the ureter and had been felt per vaginam before the operation. He also exhibited a Fractured Patella which he had wired two and a half years before the patient's death and which showed perfect bony union.—Dr. Walter Broadbent showed a case of Leucocythæmia in which there were a very large spleen and also numerous enlarged glands. The blood contained one white corpuscle for every three red; 40 per cent. of the leucocytes were myelocytes. Hypodermic injections of arsenate of iron having been given for six weeks without any good effect a trial was now being made of the x ray treatment. He also exhibited a Fusiform Aneurysm of the Second Part of the Arch of the Aorta which had ruptured into the trachea.—Dr. E. Hobhouse brought forward a case of Sporadic Cretinism. The patient was a child, aged six years, who weighed 1 stone 10 pounds, had not learned to walk, and was deficient in intellect. He also showed a case of Cerebral Diplegia in which the legs exhibited spastic movements with exaggerated reflexes but the arms were hardly affected. The sphincters were paralysed and there was internal strabismus of the right eye. The head was small and an abnormal depression could be felt on the vertex. Intelligence seemed fair; the squint had existed when the child was six months old but the parents had not noticed the spasticity of the legs till three months later.—Mr. W. Furner showed a Fibroid Tumour of the Ovary weighing seven pounds removed by operation.—Mr. T. H. Ionides exhibited a Two and a Half Months' Fœtus found in the abdominal cavity during an operation for ruptured extra-uterine fœtation.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 27th, Dr. D. N. Knox being in the chair.—Dr. J. H. Nicoll by means of a lantern demonstrated the steps of an operation for the Radical Cure of Inguinal Hernia.—Dr. Nicoll also showed specimens from a series of cases of Hernia of the Ovary.—Dr. A. Freeland Fergus read a paper on Some Practical Aspects of Bacteriological Investigations of the Conjunctiva.—Dr. W. B. Inglis Pollock gave a lantern demonstration of the More Common Organisms found in the Conjunctival Sac.—Dr. J. Walker Downie showed a Microscopic Section of a large Nasal Mucous Polypus which he removed from an infant aged eight weeks.—Dr. Downie also showed (1) a Grain of Oats which was impacted in the larynx of a child who had pneumonia; and (2) a Hard Piece of Bone which was impacted in the subglottic region of the larynx in a child aged eight months. These bodies were removed by opening the trachea and passing a narrow strip of gauze through the larynx into the pharynx. The end in the pharynx was caught by forceps and the gauze gently pulled upwards and the foreign body was dislodged and entangled in the meshes of the loose gauze.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—The annual meeting of this society was held on Jan. 27th, when the following were elected as officers for the ensuing year:—President: Dr. Donald Baynes. Vice-Presidents: Dr. Dawson F. D. Turner and Mr. Chisholm Williams. Council: Dr. J. Allan, Dr. D. Arthur, Dr. G. B. Batten, Dr. James Berry, Dr. J. A. Codd, Mr. R. H. Cooper, Mr. Hall-Edwards, Dr. G. H. Graham, Dr. W. S. Haughton, Dr. G. Herschell, Dr. J. Donald Pollock, Mr. A. D. Reid, Dr. S. Sloan, Dr. Septimus P. Sunderland, and Mr. C. A. J. Wright. Treasurer: Dr. H McClure. Assistant treasurer:

Dr. H. Lewis Jones. Honorary secretaries: Dr. H. E. Gamlen (West Hartlepool) and Dr. E. R. Morton (London).—The annual address by Dr. J. Macintyre of Glasgow was read by the retiring President, Dr. H. Lewis Jones, Dr. Macintyre being unavoidably absent through illness.—At the annual conversazione which followed there was a full attendance of members. Among the novelties shown an ingenious arrangement of an induction coil and electrolytic break for heating cauteries from the continuous main current was especially noted. It was shown by Mr. A. C. Cossor. The temperature of the burner was under perfect control and its consumption of current was very small.—Messrs. Watson and Sons showed a Glove for use by x ray workers as a protection against dermatitis and also a new form of X Ray Tube.—Mr. Leslie Miller showed the Apparatus for Winding his Jointless Section Coils and also instruments for Measuring the Current through an X Ray Tube.—Various interesting and novel instruments and apparatus were shown by other exhibitors and, taken as a whole, the exhibition gave evidence of distinct advancement during the past year.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on Feb. 3rd, Mr. J. L. Stretton being in the chair.—Mr. Stretton showed: 1. A man, aged 42 years, whose Wrist he had Excised for Tuberculous Disease. The whole of the carpus, the ends of the metacarpal bones, and the ends of the radius and the ulna were removed through a single dorsal incision. The result was satisfactory; within two months of the operation he was able to use a spade. 2. A man, aged 75 years, who Fractured his Patella Transversely. It was brought together with wire after the method of Mr. Barker and he was able to walk about in ten days. 3. A woman, aged 35 years, treated successfully with Professor Sclavo's serum for Anthrax.[1] 4. A Dermoid Cyst of the Right Ovary removed from an unmarried woman, aged 53 years. It contained a mass of hair and fixed to the upper end of the cyst wall was a portion of bone resembling an upper jaw with a row of six teeth.—Dr. Bertram Addenbrooke showed: 1. Temperature Charts of Three Cases of Pneumonia under his care in one week, all following influenza. One subsided by lysis and two by crisis. 2. An Aural Polypus. 3. A large Cancerous Tumour removed from the Abdominal Wall. 4. A large Mushroom-shaped, Phosphatic Vesical Calculus which had formed in a vesico-vaginal fistula which resulted from the operation for vaginal hysterectomy.—Mr. A. C. Oldham read a paper on Peripheral Neuritis. He described at considerable length a case which he had had under his care complicating pregnancy; the child was born at full time and was healthy and the mother made a good recovery.—Some new ethical rules having been adopted the meeting terminated.

ROYAL MEDICAL SOCIETY, EDINBURGH.—At a meeting of this society held on Feb. 3rd Dr. W. E. Carnegie Dickson demonstrated some specimens of Pathological Marrow conditions. He prefaced his remarks by an account of the anatomy and the histology of the marrow and then proceeded to show specimens of various degenerations. He next discussed more fully the development, the physiology, and the pathology of the various marrow cells and concluded by describing the changes in the marrow which accompanied various pathological conditions of the blood.—Dr. H. J. Dunbar read a paper on the Value of Examination of the Blood in Diagnosis. He commenced by discussing the histological examination of the blood in various conditions and then went on to describe the value of other methods of examination, such as the determination of the freezing point or of the alkalinity of the blood and the various bacteriological reactions.—Dr. L. S. Milne read notes of a case of Adherent Pericardium.

[1] THE LANCET, Feb. 4th, 1905, p. 292.

NATIONAL DENTAL HOSPITAL.—The annual general meeting was held at the hospital in Great Portland-street, W., on Jan. 31st, Mr. Alfred Farquhar, the treasurer, being in the chair. Among those present were Mr. W. Ward Cook, Mr. W. H. Grabham, Mr. F. Canton, Mr. Herbert J. Relph, Dr. James Maughan, Mr. S. F. Rose, and Mr. Sidney Spokes, Dean. The report for 1904 unfortunately shows a deficit amounting to £774 and the committee of management earnestly appeals for aid to decrease this debt. The quality and the quantity of the work done have been well maintained.

# Reviews and Notices of Books.

*Human Embryology and Morphology.* By ARTHUR KEITH, M.D. Aberd., F.R.C.S. Eng., Lecturer on Anatomy, London Hospital Medical College; Examiner in Anatomy, University of Aberdeen, and in the Natural Science Tripos, University of Cambridge. Second edition, revised and enlarged. Illustrated with 316 figures in the text, of which 64 are new in this edition. London: Edward Arnold. 1904. Pp. 402. Price 12*s.* 6*d.* net.

THIS the second edition of Dr. Arthur Keith's most useful volume has undergone careful revision and, without being materially enlarged, has kept pace with the work of other embryologists, has been rendered more precise, is more fully illustrated, and has been in every way improved. The author states in his preface that in this edition the chapters dealing with the early development of the human embryo and the formation of the placenta have been entirely rewritten; that much of the chapter dealing with the uro-genital system has been amended; that many additions have been made to the chapters on the central nervous system; and that additions have been made to the remaining chapters on the bones and epiphyses, heart, blood, lungs, diaphragm, peritoneum, cæcum, and appendix.

We consider the production of a good work on embryology to be one of the most difficult tasks that the physiologist can undertake. Its satisfactory execution demands great powers of accurate observation and unwearied patience, for the object of his research is undergoing constant change, while the parts are extremely delicate, require for the most part great familiarity with the microscope, and easily break down or become displaced when sections are required, however sharp the knife may be and however steady the hand. Then the several regions of the rudimentary organism not only alter in form and position but they are in process of development and that which is at one time little more than a minute and an amorphous mass of cells rapidly assumes the form and the proportions as well as the structure of a complex organ. But even if he be a good observer the embryologist must not only comprehend what he sees but he must be a good draughtsman possessed of much literary skill and power of expression so that he may build up for the learner in stereographic fashion, if the term may be allowed, the concomitant structural and morphological changes which have been observed in a succession of sections in such a manner that a concrete conception of the growing and developing organism at different periods of its life may be obtained.

Dr. Keith pursues a different track from the majority of writers on embryology, for instead of commencing with a description of the ovum he begins with an account of the outgrowths which form the face at about the middle of the first month of fœtal life, pointing out the teratological results of their imperfect development or non-union as seen in harelip and cleft palate. The modes of formation of the nasal duct, of the naso- or anterio-palatine canals, of the Vidian, pterygo-palatine and infra-orbital canals, with the relations of the rudimentary organ of Jacobson, are all fully and instructively given. The development and the ossification of the mandibular arch, with the relations of the palate and pterygoid processes and quadrate bones, as well as the derivation of the malleus and the auditory ossicles, are shown with a clearness that would have gladdened the hearts of Kitchin, Parker, and Huxley.

The author has had the advantage of the coöperation of Dr. G. Elliot Smith in the section on the development of the brain and the spinal cord. The cause of the oblique course of the roots of the spinal nerves is shown to be the rapid growth of the spinal column and the degree to which the obliquity extends in different parts of the vertebral column is given on the authority of Professor R. W. Reid. It varies from two

vertebræ in the lower cervical region to five in the lumbar and ten in the coccygeal region. The differentiation of the spinal part of the neural tube is described, showing that of the cells which at the sixth week form the medullary plates some become neuroglial—or elongated and branched supporting—cells, others situated in the outer zone of the tube wall form a meshwork, others more centrally placed form the ependyma, and some situated in the middle zone have their interspaces filled with neuroblasts. The neuroblasts are produced from germinal cells lying in, or near, the inner zone. Those in the roof and floor of the neural tube scarcely undergo any proliferation but two lateral centres of proliferation appear, one of which, the dorsal lamina, contains cells that are connected subsequently with the ingrowing fibres of the dorsal root, and a ventral lamina, at which the cells of the anterior horn are produced and from which the fibres of the anterior root arise. The development and the date of myelinisation of the columns of Goll, Burdach, Flechsig, Clarke, and Gowers are given with those of the intermediate and pyramidal tracts. The middle zone, above mentioned as filled with neuroblasts, forms the horns and the grey matter of the cord. The cerebellum is described as developed in lateral plates or folds proceeding from the dorsal laminæ of the anterior part of the hind-brain; these fuse in the middle line, the line of fusion becoming the vermis. Towards the end of the third month the cerebellar plate becomes demarcated into anterior, middle, and posterior lobes which are separated by two transverse fissures and are recognisable in nearly all mammalian cerebella. The parts in the fully developed adult cerebellum proceeding from each of these lobules is given with the mode of formation of the three cerebellar peduncles which are shown to be highly complex. Dr. Keith points out that the cerebellum reaches its greatest development in primates amongst mammals and in swimming vertebrates, in both of which groups the equilibrium of the body is finely adjusted.

A much fuller account of the development of the respiratory organs is to be found in Dr. Keith's treatise than elsewhere, for he shows the mode in which the branchial system and the swim-bladder of fishes and amphibians undergo evolution into the mammalian respiratory system. This is effected by the formation of a respiratory passage leading from the pharynx to the incipient lungs, by modifications of the last pair of branchial arches, and by changes taking place in the branchial muscles of the lower animals leading to the formation of a muscle of inspiration or diaphragm and in the muscles of the body wall ending in the formation of the muscles of expiration.

The development of the uro-genital system is given in considerable detail, the description of the successive changes being founded on the researches of Keibel, Berry Hart, J. P. Hill, and F. Wood Jones. It is shown that in the first instance an organ termed the pronephros appears in the intermediate cell mass or solid protrusion into the cœlom on either side of the incipient mesentery and in the cervical region. It consists of tubules which open externally into the cœlom or peritoneal cavity by trumpet-shaped ciliated ends representing the segmental or nephridial tubules of the Vermes. Internally they are connected with the anterior part of the Wolffian duct and soon disappear. In the second month of intra-uterine life the mesonephros or Wolffian body is fully developed. This consists of numerous tubules which have a blind extremity containing a glomerulus and open internally into the middle part of the Wolffian duct. These tubules secrete urine which the Wolffian duct conveys to the cloaca of the hind-gut just as in the frog. Finally, the tubules opening into the lower or posterior part of the Wolffian duct persist, becoming part of the genital system in the male but functionless in the female. In the male the Wolffian duct forms (1) the tube of the epididymis which is coiled up in the globus major, the body, and the globus minor of the epididymis; (2) the vas deferens and common ejaculatory duct; and (3) the vesiculæ seminales. The stalked hydatid frequently seen on the upper extremity of the testicle is the upper or anterior extremity of the Wolffian duct. The genital tubules of the Wolffian body become the rete testis, vasa efferentia, and coni vasculosi. The renal tubules of the Wolffian body form (1) the vasa aberrantia found in the globus minor and (2) the paradidymis or organ of Giraldès sometimes discoverable in the cord above the globus major. The permanent kidney is derived from two elements: (1) a diverticulum of the Wolffian duct which gives origin to the ureter-pelvis of the kidney, calyces, and collecting tubes, and (2) the posterior segment of the intermediate cell mass, whence arise the glomeruli, vessels, and connective tisue. In the female a second tube forms in the intermediate mass named the Müllerian duct, the upper part of which becomes the Fallopian tube. When the ovary and the tube migrate to the pelvis the Wolffian mesentery which comes to form the meso-salpinx is also drawn within the pelvis and with it all the Wolffian remnants; a hydatid attached to the meso-salpinx (part of the broad ligament) represents probably the pronephros and may become cystic; the Wolffian duct runs in the meso-salpinx to the uterus and terminates in the vulval cleft behind and to the outer side of the urethra. The upper part of the duct only remains in women; the lower parts disappear, or if they persist constitute the duct of Gaertner. The genital tubules of the Wolffian duct, those, namely, which are connected with the ovary, persist and form the epoöphoron or parovarium or organ of Rosenmüller and frequently form large cysts. The renal Wolffian tubules persist, lie between the ovary and the uterus, and form the paroöphoron. This account, which we have condensed, gives the results of recent researches and is a good piece of work, constituting a considerable advance on the statements usually made in text-books.

The formation of the placenta is very interestingly given. It is shown that the chorion arises from a combination of two elements, the trophoblast or enveloping layer of epiblast and an extension from the somatic mesoblast. The trophoblast is divisible into a basal layer and a mass of cells to which the term "syncytium" is applied. The cells possess remarkable phagocytic power and burrow into the thickened and vascular mucous membrane of the uterus in a systematic and regulated manner; they absorb the tissue with which they come into contact and lay open the blood-vessels of the uterine mucous membrane. The maternal blood escapes into spaces inclosed by the syncytial processes or into lacunæ formed by the vacuolation of the processes. In certain circumstances, he adds, at present unknown, syncytial cells escape into the general circulation and form malignant growths. Drawings are given showing the relation of the syncytium and the blood spaces of the placenta.

We have no further space to give to Dr. Keith's treatise except to add that it should be in the hands of every physiologist and gynæcologist in the kingdom.

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*Syphilis de l'Œil et de ses Annexes. (Syphilis of the Eye and its Adnexa.)* Par le Dr. F. TERRIEN, Ancien Chef de Clinique Ophtalmologique de la Faculté de Paris. Paris: G. Steinheil. 1905. Small 8vo, pp. 316. Price 4 francs.

THE manifestations of syphilis in the eye and the parts adjoining constitute a large and important chapter in the history of that disease. The eye seems to absorb more than its due proportion of syphilis as compared with other regions of the body but it is to be borne in mind that in this limited area are crowded together nearly all the tissues found elsewhere as skin and connective tissue, blood-vessels, nerves, muscles, bone, and gland, besides some special structures like

the cornea, the lens, and the vitreous humour which, however, rarely present any appearances that are directly attributable to the action of the syphilitic virus. It is fortunate, however, that when the eye is attacked owing to its exposed position the onset of the disease is recognisable at an early period and appropriate remedies, if skilled assistance is at hand, can be applied.

In Dr. Terrien's treatise there is an introductory chapter entitled "Notions Anatomiques" which gives a short account of the nomenclature and disposition of the parts entering into the formation of the eye and the parts adjoining. There are also a few paragraphs describing the use of the ophthalmoscope. The volume is divided into three parts, the first discussing hereditary syphilis; the second dealing with symptoms of acquired syphilis, as seen in primary, secondary, and tertiary syphilis; and the third giving the treatment of the various forms and stages. The author thinks that the distinction between early or infantile hereditary syphilis and delayed hereditary syphilis or the syphilis of youth should be preserved. He intimates that considerable caution should be exercised in speaking of syphilis transmitted to a third generation through a mother who is only the subject of hereditary syphilis, since there is always the possibility of the father being infected. He cites the observations of Mr. E. Treacher Collins, M. Huguenin, and others, but is of opinion that, however likely it may be, the fact has not been scientifically established. The various forms of infantile hereditary syphilis are well given and include iritis with its several forms of serous and acute iritis, iritis combined with keratitis, and gummatous iritis; retino-choroiditis, which presents itself under the various types of smaller or larger pigment spots in the retina, affecting both sides; peripherally situated accumulations of pigment with little impairment of vision; yellowish-white masses which, if they fuse together and advance towards the centre, may seriously embarrass vision; and, lastly, that type in which the pigment either disappears or becomes greatly hypertrophied and vision is much impaired, though blindness is not produced. Then follows a description of optic neuritis, of changes in the retinal vessels, of various congenital malformations, such as coloboma, buphthalmia, microphthalmia, and of that form of nystagmus to which he has applied the term "nystagmus of intra-ocular origin." The manifestations of syphilis in youth are next considered and a particularly good account of interstitial keratitis is given. The author observes that whilst Hutchinson thought that this affection was almost always a sign of inherited syphilis later authors have assigned a smaller proportion of cases to heredity as a cause, Saemisch considering that 62 per cent. of cases of interstitial keratitis were due to inherited syphilis, Alexander 36 per cent., and Michel 55 per cent.

A long section is devoted to affections of the eye due to acquired syphilis. The most frequent seat of chancre is stated to be the inner angle owing to the stagnation of the tears in this region. The diagnosis between primary chancre and hordeolum, tuberculous ulceration, lupus, epithelioma, and malignant pustule is given in full. Dr. Terrien does not mention the atrophy, the bleaching, and the falling out of the cilia and of the hairs of the eyebrows which often accompany or follow a chancre of the lid. The secondary lesions occurring in the choroid, optic papilla, and nerve are illustrated by good woodcuts. Under the secondary lesions he includes exophthalmia and various affections of the accessory organs, such as roseola and exanthema of the lids, papular and mucous affections of the conjunctiva, affections of the lacrymal apparatus, and such affections of the orbit as osteoperiostitis, gummata of the orbit, and exostosis and osteomata. The conditions which he attributes to tertiary syphilis are gummata, motor paralysis and contractures, and neuralgia especially of the fifth nerve. The sequelæ of syphilis, tabes and general paralysis, with the numerous and remarkable modifications of the reflex actions of the iris which are usually associated with lesions of the central nervous system, are very interestingly described. We have only space to add that in regard to the treatment of syphilis Dr. Terrien considers that iodine and mercury are the sheet anchors on which reliance must be placed. Taken internally or applied by friction neither is to be depended on, but daily injections made in the gluteal region prove of the greatest service and the best solution for use as an injection is the following: mercury biniodide, 20 centigrammes (about three grains); pure sodium iodide, 20 centigrammes; and distilled water, 10 cubic centimetres. Dr. Terrien's book is very sensibly written and is evidently the outcome of much experience.

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*Orthodontia and Orthopædia of the Face.* By VICTOR HUGO JACKSON. London and Philadelphia: J. B. Lippincott and Co. 1904. Pp. 517. Price 21*s.* net.

DURING the last few years many books have been published on the irregularities of the teeth but only a few of these volumes have treated the subject in anything like a satisfactory manner. Treatment to be rational must be based upon a correct understanding of the underlying causes but this fact seems to have been totally disregarded by many of the authors who apparently are imbued with but one main idea—namely, to bring irregular teeth into a correct line whether there is or is not room in the arch. Too often works have been published with the idea of advocating this or that system of treatment, the difference in the systems lying not in the application of different underlying principles but in the slightly varying methods of applying force to teeth. The present volume is not an exception. Etiology is but scantily dealt with, even the views enunciated are open to question, and the main part of the book is devoted to a description of the author's so-called system of regulating. We quote the author's words: "*Jackson System of Anchorage.*—Attention is called to the method devised by me for anchoring appliances to the teeth with spring-clasp attachments. These are fitted to one or more of the molars or bicuspids on each side of the arch, in some cases depending entirely on them for anchorage; in other cases using in conjunction with them partial clasps on adjoining teeth. The appliance is made in such a manner that it can be removed or replaced when desired for cleansing on putting on more pressure." Beyond the anchorage the methods recommended differ but little from those used by many others. A detailed description is given of plates for mechanically correcting the various irregularities met with in practice. As an appendix there are 44 plates containing illustrations of regulating apparatus.

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## LIBRARY TABLE.

*Manual of Serum Diagnosis.* By Dr. O. ROSTOSKI, University of Wurzburg. Authorised translation by Dr. CHARLES BOLDUAN. London: Chapman and Hall, Limited; New York: John Wiley and Sons. 1904. Pp. vi.-86. Price $1 net.—This little book gives a very clear account of the present state of our knowledge on the subject of agglutination and precipitation and their application to diagnosis. The first chapter deals with the principles upon which the technical procedures used in the different tests are founded. In the second chapter the Gruber-Widal test for the presence of enteric fever is considered; the author recommends the use of a pipette, such as that belonging to the Thoma-Zeiss hæmocytometer, for the purpose of making the requisite dilution of the serum and considers that to be called positive the reaction should take place in a dilution of 1 in 60. As a rule, the agglutinating power passes off quickly after the cessation of the disease. The existence of a strong reaction in a case which clinically is not enteric

fever may point to some unusual localisation of typhoid bacilli, as in a case of nephritis and in one of pneumonia here alluded to, both of which turned out to be due to infection with this organism. Dead bacilli may be used for the agglutinative reaction and we may thus avoid the danger of using virulent cultures. "Ficker's diagnostic," a preparation of this nature, has given very satisfactory results; it is to be regretted that so far the exact manner of its preparation has been kept secret. In cases which are clinically enteric fever but fail to give a Widal reaction the serum of the patient should be tested for its agglutinating action on paratyphoid bacilli. In diseases other than enterica (Chapters 3 and 4) agglutination is not, according to this author, of any diagnostic value; he does not, however, make any allusion to Malta fever in which practical use has been made of this phenomenon. On the other hand, agglutination is valuable in many cases to the laboratory worker as a proof of the nature of a particular organism. The precipitation test for human blood (Chapter 5) seems now to have taken its place as a valuable procedure in medico-legal investigations. The book before us has no index, though a table of contents at the beginning serves to supply most of the references required. An appendix records some interesting observations by Dr. R. J. Wilson on the distribution of bacilli, normal and agglutinated, in fluid media. For a volume of 86 pages, of some 220 words each, the price seems somewhat high.

*A Manual of Toxicology.* By ALBERT H. BRUNDAGE, A.M., M.D., Phar.D., Professor of Toxicology and Physiology in the Rhode Island College of Pharmacy and Allied Sciences. Fourth edition, revised and profusely illustrated. London: Baillière, Tindall, and Cox; New York: The Henry Harrison Co. 1904. Pp. 401. Price 8*s.* 6*d.* net.—That three editions of this manual have been absorbed in as many years and that this fourth edition is now called for is the best evidence of its popularity amongst students of toxicology. In his various capacities as student, pharmacist, physician, and teacher the author has been impressed with the importance of illustration and the immeasurable advantages to be derived from it. He has therefore endeavoured to provide that this edition should present ample pertinent illustrations. Dr. Brundage hopes that through this association of fact and illustration many of the toxicological facts may be simplified and better disseminated. The ten coloured plates showing the conditions of the stomach in cases of poisoning are beautifully executed and faithfully portray the states of that organ. The whole book is clearly written and so well arranged and indexed that rapid reference may be made to it. Part VIII., which deals with coma, its interpretation and treatment, is valuable, as is also Part X., which treats of chronic poisoning and drug habits. The Dose Table and the Table of Maximum Daily Doses should both prove of great utility.

# Reports and Analytical Records
FROM
# THE LANCET LABORATORY.

## ALPHOZONE.

(FREDERICK STEARNS AND CO., DETROIT, MICHIGAN. AGENTS: THOMAS CHRISTY AND CO., 4, 10, AND 12, OLD SWAN-LANE, UPPER THAMES-STREET, LONDON, E.C.)

"Alphozone" is an organic peroxide and occurs in the form of a white crystalline powder soluble in water. It is decidedly more stable than the metallic peroxides or peroxide of hydrogen itself. On adding solution of permanganate of potassium to "alphozone" no change takes place until the fluid is warmed when mutual decomposition sets in and oxygen gas is evolved. "Alphozone" does not respond to the chromic acid test for peroxide of hydrogen until it is neutralised (for it is strongly acid to test paper) with ammonia. There is then slight effervescence and on adding sulphuric acid and chromate of potassium and shaking up with ether the characteristic blue colour of perchromic acid is obtained. "Alphozone" consists in reality of a substitution product of hydrogen peroxide in which the hydrogen atoms are replaced by two succinyl radicles, its formula being $(C_4H_5O_3)_2O_2$. It is stated to be non-poisonous whilst exhibiting powerful germicidal properties. According to bacteriological tests "alphozone" shows a germicidal power or efficiency equal to that of corrosive sublimate.

## PINE TAR SOAP.

(THE PACKER MANUFACTURING CO., NEW YORK. AGENTS: MAY, ROBERTS, AND CO., 9 AND 11, CLERKENWELL-ROAD, LONDON, E.C.)

This is a very agreeable soap to use and, moreover, according to our tests, it contains no free alkali. The soap has a pleasant odour of pine oil and whilst giving a satisfactory lather is economical in use. It is free from ingredients of an irritating nature and is therefore harmless to delicate skins.

## KALITZER SPARKLING WATER.

(NATHANIEL SMITH AND CO., 373, HIGH-STREET, CHELTENHAM.)

According to the results of our examination this agreeably effervescent water is made with perfectly clean and pure distilled water. On evaporation a residue of potassium carbonate was obtained which gave absolutely no sign of organic contamination. Calculating the salt present as bicarbonate of potassium the amount was equal to just under 15 grains per pint. The preparation of the water is evidently conducted with great care as we could get no evidence of impurities. Sparkling Kalitzer affords a very agreeable way of administering an alkaline water when alkaline treatment is indicated, as in gouty and rheumatic conditions.

## OFFLEY'S "DUKE" VERY OLD PORT.

(OFFLEY FORRESTER AND CO., 66, MARK-LANE, LONDON, E.C.)

This is a well-matured, delicate, tawny wine. Analysis gave the following results: alcohol, by weight 18·08 per cent., by volume 22·18 per cent., equal to proof spirit 38·87 per cent.; extractives, 7·69 per cent.; mineral matter, 0·19 per cent.; fixed acids reckoned as tartaric acid, 0·18 per cent.; volatile acids reckoned as acetic acid, 0·09 per cent.; and sugar, 5·27 per cent. The analysis shows for port wine a minimum of sugar, extractives, and alcohol. This indicates a wine that has been long matured. The bouquet and flavour are excellent. The wine is exactly opposite in character to what is called a "heavy" and "heady" port. We believe it to be a pure and genuine wine.

## ROBB'S SOLUBLE MILK FOODS.

(A. ROBB AND CO., 79, ST. MARTIN'S-LANE, LONDON, W.C.)

According to our analysis these foods exhibit a chemical composition consistent with the physiological requirements of infant life. Both foods are free from starch or cane sugar. Food No. 1, which is intended for the use of infants for the first four months of life, exhibits the following composition: moisture, 3·80 per cent.; fat, 18·00 per cent.; proteid, 13·67 per cent.; mineral matter, 2·10 per cent.; and carbohydrates, 62·43 per cent. The carbohydrates consisted of milk sugar with the hydrolysed products malt sugar and dextrose. The food is, therefore, largely soluble and, as a matter of fact, we found that over 70·00 per cent. was soluble in cold water. The amount of fat is satisfactory as is also that of the mineral matter containing phosphates. Food No. 2 contains a larger proportion of soluble sugars but is free from starch and cane

sugar. No less than 83·60 per cent. of the food proved to be soluble in cold water. The larger proportion of carbohydrates necessarily reduces the percentage amounts of the other elements. Analysis gave the following results: moisture, 3·00 per cent.; mineral matter, 2·00 per cent.; fat, 4·80 per cent.; proteid, 7·60 per cent.; and carbohydrates, 82·60 per cent. The proportion of carbohydrates might, we think, be reduced with advantage and that of the fat and the proteid correspondingly increased.

### KRESOPHEN.

(WILLOWS, FRANCIS, BUTLER AND THOMPSON, LIMITED, 40, ALDERSGATE-STREET, LONDON, E.C.)

We find that the statement in regard to the percentage of pure cresols in this preparation is correct. Thus on acidifying the preparation (which is alkaline) with hydrochloric acid the cresols separated to the extent of half the volume of the original fluid. This compound cresol is evidently prepared from materials of good and pure quality. It is free, for example, from inert tar oils and we can quite believe the statement that its bacteriological efficiency is superior to that of carbolic acid since cresols combined with alkali are known to be so and, moreover, they are less poisonous than is phenol.

### ALL-MALT STOUT (GROUSE BRAND).

(MICHELL GOODMAN, YOUNG, AND CO., STAMFORD HILL BREWERY, LONDON, N.)

Nowadays it is refreshing to learn of instances in which malt liquor is really made from malt and we believe such to be the case with this stout. On analysis the following results were obtained: alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent.; extractives, 7·53 per cent.; and mineral matter, 0·33 per cent. This malt liquor contains an excellent proportion of nourishing constituents, as is evident from the amount of extractives which contain, moreover, just over 10 per cent. of proteid. The mineral matter was rich in phosphates found in malt. The stout was in good condition, free from excessive acidity, and satisfactory to the taste. It contained no substitutes.

### CAPE HERMITAGE WINE.

(E. WESTMACOTT AND CO., 150, LEADENHALL-STREET, LONDON, E.C.)

Undoubtedly good and wholesome wines are produced in Cape Colony; they are, at least, the genuine fermented juice of the grape and they also possess distinct merit from the point of view of flavour and bouquet. It is, of course, an error to take as a standard for all wines the wines of France, just as it would be to regard all cigars from the point of view of the Havana crops. Cape Hermitage Wine is of burgundy type, somewhat full and fruity, with a slightly bitter flavour. Chemically speaking, it should be dietetically sound, as in particular both the sugar and the acid are almost negligible quantities. This will be seen from the following analysis: alcohol, by weight 11·62 per cent., by volume 14·37 per cent., equal to proof spirit 25·18 per cent.; extractives, 2·58 per cent.; mineral matter, 0·23 per cent.; sugar, 0·15 per cent.; fixed acids reckoned as tartaric acid, 0·30 per cent.; and volatile acids reckoned as acetic acid, 0·078 per cent. The wine possesses the invigorating qualities characteristic of wines of burgundy type.

### CAILLER'S SWISS MILK CHOCOLATE.

(ELLIS AND CO., 15, KING-STREET, CHEAPSIDE, LONDON, E.C.)

Some amount of proof that this chocolate is prepared with milk is afforded in the fact that it contains nearly 30 per cent. of fat, associated with the proteids of both milk and cocoa. Part of the fat is of course butter fat and part cocoa fat. The moisture amounted to 1·30 per cent. and the mineral matter to 1·0 per cent. This milk chocolate is evidently prepared from excellent materials and the flavour is particularly satisfactory. The preparation may be used conveniently for preparing a cup of hot chocolate.

## New Inventions.

### A NEW APPARATUS FOR THE ESTIMATION OF UREA.

THE instrument shown in the illustration has been designed with a view to facilitate the estimation of urea for clinical purposes by means of the hypobromite method. The novelty consists in measuring the nitrogen by means of a column of water which rises in a graduated tube instead of measuring it by the volume of fluid displaced, as is done in previous ureometers. The glasswork, which is composed of two bulbs and an upright graduated tube, is in one piece. The outer bulb is for holding the hypobromite solution and in it the nitrogen is generated. The other bulb contains distilled water, coloured, if need be, with, say, three drops of red ink. This fluid will, when the bulb is full, be above the level of the lowest reading in the upright stem and when the nitrogen is given off by the action of the hypobromite in the former bulb it passes over and displaces a corresponding volume of water which rises in the graduated tube. In addition to the glasswork there are provided a perforated india-rubber stopper which fits into the mouth of the outer bulb and a small vulcanite syringe similar to those used for hypodermic purposes, with a mark on the stem of the piston to indicate when one cubic centimetre of fluid has been expressed from it. The indicating fluid is introduced into the long upright arm to the level already indicated. This may be allowed to remain permanently. In the next place from five to ten cubic centimetres of freshly made hypobromite solution are poured into the outer bulb and the stopper is firmly inserted. The syringe being then quite filled with the urine to be examined is inserted in the opening in the stopper. The nozzle of the syringe fits tightly into the opening so as to prevent the escape of any nitrogen. The reading on the graduated tube having been noted in order to identify the starting point of the rise, the piston of the syringe is slowly pushed inwards until the mark on the stem indicating one cubic centimetre of fluid expressed comes flush with the barrel. The empty syringe with the piston in the above position is left *in situ* and the instrument is gently rotated from side to side catching hold of the arch above. It is therefore unnecessary to touch the bulb containing the mixture evolving the gas after the urine has been introduced. When the evolution of nitrogen ceases the apparatus is left at rest for a minute or two in order to cool and a second reading is taken. The difference between the two readings less one cubic centimetre for the fluid injected from the syringe gives the volume of the nitrogen evolved, from which the weight or percentage of urea is obtained from a table in the usual way. When the estimation is completed the syringe and stopper are withdrawn and the indicating fluid falls back to its original level. With this instrument the froth causes no trouble, even if a little passes over into the second bulb. This is a decided advantage in dealing with albuminous urines. Messrs. Alexander and Fowler, surgical instrument makers, of Liverpool have made the instrument and supply it.

WILLIAM G. LITTLE, M.B. Edin

Great Crosby, near Liverpool.

# THE LANCET.

*LONDON: SATURDAY, FEBRUARY 11, 1905.*


## The Building By-laws.

THE subject of physical deterioration, or rather of physical inefficiency, is so much before the public mind at the present moment that almost every factor in our social life is by turns held responsible for the lack of physical fitness among the poorer classes and in this general ebullition of public sentiment the building by-laws have come in for, perhaps, more than their fair share of attention. As we recently pointed out in the Public Health section of our Annus Medicus, there is a tendency to insist that the reason above all others why the rural districts are becoming largely depopulated is the alleged prohibitive cost of building cottages to comply with the requirements of local by-laws. To those who are familiar with all the economic and social forces making for the exodus from country to town this by-law question seems hardly worth discussion in connexion with the subject. But as the lay press has been somewhat diverted from the real issue by Mr. Justice GRANTHAM'S alleged failure to comply with the one solitary provision of the by-laws, that detailed plans of cottages about to be built must be submitted to the local authority for approval, it may be useful to state briefly the facts relative to building by-laws in rural districts generally. In the first place it has to be pointed out that in something like 40 per cent. of our rural districts there are no building by-laws whatever in force and we are not aware that anyone has attempted to demonstrate that in such districts where there are no restrictions on building the population is increasing. It may also be added that the adoption of any by-laws whatever relative to building is an entirely voluntary matter, so that district councils wishing to befriend the local jerry builder are quite at liberty to do so. These facts do not appear to be appreciated generally. It is not quite clear to us which special provisions of the by-laws those who write so voluminously concerning them wish to keep and which they desire to relinquish. For instance, are they anxious to build houses on damp sites without drainage and without a damp-proof course and are they wishful to be entirely free from all restraint in the construction of cesspools and wells sunk in a pervious formation? Do they, too, seriously urge that houses shall be indiscriminately crowded together without light, air, or ventilation, and without any open space in connexion with each house? Is it their object at this juncture to recommence the erection of slums and hovels which it has been the pride of the latter half of the nineteenth century to have removed in large part? It would be well if those who wish to do away *in toto* with building by-laws were to inspect the dwellings in our poorer rural districts in a critical spirit. They might talk to the occupiers and encourage them to show the defects of their dwellings, with the floors rotten from damp, the papers peeling off the walls from a similar cause; low, leaky roofs and defective light and ventilation; pervious, filthy cesspits and pervious and imperfectly protected wells. These are some of the conditions which may be found in all parts of the country and those persons who are endeavouring to perpetuate them and to erect similar structures at the present day are the enemies of sanitation. It is earnestly to be hoped that the Local Government Board, which is sometimes in need of being reminded that it is the central *health* department of the State, will show itself proof against lay social pressure from without. In any circumstances it might be well, seeing that Mr. LONG has already heard the case from the landowners' point of view, if medical officers of health were to seek an interview with him by way of equalising the pressure already exerted upon him in one direction. But although we are strongly opposed to any interference with so much of the by-laws as relate to health, we are quite willing that the restriction relative to construction and to the prevention of fire should where practicable be relaxed and in this connexion we desire to draw attention to a letter from Dr. FRANCIS T. BOND which appeared in the *Times* of Jan. 19th.

Dr. BOND contends that the distinction which obtains in the matter of by-laws between "urban" and "rural" districts is in some degree illogical. This contention is quite sound and for the simple reason that large parts of many "urban" districts are really quite rural in character, while the conditions which obtain in some of the larger villages, in "rural" districts, or in "rural" districts abutting upon towns are, to all intents and purposes, urban in nature. In other words, there is ample room for the application of both the urban and the rural series of by-laws in the same sanitary district. It does not, however, appear to be known generally that it is now the practice of the Local Government Board, when local authorities apply for sanction to adopt either the urban or the rural series of building by-laws, to invite such authorities to reconsider the application with the view of determining whether the whole of either series is applicable to the whole district or whether there may not be parts wherein the new rural code will suffice and other parts where a modification of the urban code is not called for. It is, too, observed in the introduction to the new rural model of the Local Government Board that the series in question "contains no clauses dealing with questions of stability or the prevention of fire, or with the level, width, and construction of new streets" and the district council is invited "to carefully study the clauses and select those that are appropriate to the needs of the district or the portion of it under consideration." We would strongly urge all those who are seriously interested in the discussion as to the building by-laws to invest 6*d*. with Messrs. EYRE and SPOTTISWOODE and to secure a copy of this new model code. It is, we believe, possible under this series, or some variation thereof, to erect wooden buildings in rural districts. But Dr. BOND further suggests that the distinction as regards by-laws should be established not between urban and rural districts but between "detached and non-detached houses." While allowing very considerable latitude with respect to detached houses the by-laws should, he says, insist in the

latter case "that such agencies as fire, wind, rain, and infection shall when affecting one house have as little chance of damaging the inmates of the house or houses connected with it as possible, and that in regard to the disposal of solid and liquid refuse each house shall be as independent of its neighbour as it is practicable to make it." This suggestion is one with which a large number of medical officers of health will agree, but a difficulty arises with regard to the latitude to be allowed in the case of detached houses. So long as a house is detached, well and good, but it would be necessary in order to perfect Dr. BOND'S suggestion that the detached house should remain so and the letter by Mr. DOUGLAS ALLPORT in the *Times* of Feb. 7th does not in our view meet this difficulty. There are places in large towns where the houses were once detached but have been since built on to in such fashion that what was once a suburban road of detached villas is now a street of continuous bricks and mortar. This is a contingency that will have to be provided against in all rural districts which are within the sphere of the probable expansion of large towns and in this connexion regard will also have to be had to the width of roads.

It has been suggested that all by-laws should be done away with and that the essential provisions relating to health which they contain should be embodied in a statute applicable alike to town and country. It is thought by some that there would be thus less interference with individual liberty. While seeing much in this proposal we hesitate to advocate it as a practicable measure at the present time, as we think that certain of the restrictions which are contained in the London Building Act would press somewhat heavily on rural districts; nor do we think that what is suitable for the country would suffice for the metropolis. As we opened this article with a reference to physical deterioration, we may fittingly close it by quoting recommendation No. 6 of the report of the Inter-departmental Committee on Physical Deterioration which is as follows:—

*Building and open spaces.*—Local authorities in contiguous areas which are in process of urbanisation should coöperate with a view of securing proper building regulations, in furtherance of which end the making of building by-laws to be approved by the Local Government Board should be made compulsory on both urban and rural authorities; attention should also be given to the preservation of open spaces with abundance of light and air. By the use of judicious foresight and prudence the growth of squalid slums may be arrested, and districts which hereafter become urbanised may have at least some of the attributes of an ideal garden city.

## The Care of the Feeble-minded.

THE problem of the care of the feeble-minded may be said first to have received attention on anything approaching a general scale in Europe and America towards the middle of the last century. In France the attempt to deal with this question may be traced to the beginning of that century and that country has been called the birthplace of the new education as it applies to the mentally defective class. Switzerland is another country which earlier than most occupied itself with the welfare of such defectives, being no doubt largely prompted thereto by the wretched condition of the cretins in its valleys. It is true that isolated efforts to collect the feeble-minded, together with the homeless and the outcast, for the purpose of care and supervision can be traced to much earlier dates but the general movement is associated with the period mentioned. In ancient times it is well known that the congenitally weak-minded were either destroyed outright or allowed to perish, being deliberately exposed to the risk of death, unless, perchance, they were tolerated for the sake of diversion. The drastic methods of the ancients find a milder modern counterpart in suggestions for the asexualisation of the mentally defective, suggestions which have already in a limited way been put into practice in the United States. In the Middle Ages the feeble-minded appear often to have wandered unmolested, being regarded with a certain superstitious reverence ("les enfants du bon Dieu"), and doubtless some of the fools and the jesters of mediæval times were recruited from this class. The village "fool" is still to be found, although there has of late years been a growing tendency to sweep all such feeble-minded persons into asylums for the insane, which is undoubtedly a mistaken course.

All schemes for dealing with the feeble-minded are necessarily based upon their classification and also upon the fact that cure does not take place but that even the best of them require a certain amount of supervision at the expiration of the period of training. For practical purposes these defectives may be classified as idiots and low-grade imbeciles, unimprovable or improvable in but slight degree, and mainly in self-help; imbeciles of higher grade, capable of being trained to such a degree as to be partially self-supporting; and the mentally feeble, capable of training to the extent of being self-supporting. The needs of the first class are met by the Idiots Act of 1886, which permits the detention of idiots and imbeciles in special institutions. These, however, are far too few, large areas of the country being unprovided for. In default of special institutions these cases, as well as many of the trainable classes, are relegated to workhouses and asylums where they are totally out of place except, perhaps, in those rare instances in which it has been deemed worth while to make separate provision for them. Too often such children are found scattered about asylum wards where their presence is a source of irritation to the insane and is apt to give rise to degrading practices. It is desirable that it should be made incumbent on county councils to provide accommodation for this class which could be cared for on a simpler and cheaper scale than that required in the case of the insane. It is, however, when we come to consider the second and third classes, as defined above, of defectives that we recognise the inadequacy of the means at present available for their detention and training and the harm which in consequence results to society. Unfit for ordinary school education, turned adrift from home, these feeble-minded individuals wander about living as best they can. Their history is made up of vagabondage, larceny, incendiarism, and criminal assaults. Feeble-minded young girls are received in a state of pregnancy into charitable institutions; feeble-minded youths are consigned to prison and transferred to the nearest asylum, where an anthropometric examination reveals abundant and pronounced stigmata of degeneration.

At the Guildhall Conference held on Oct. 14th, 1904, a suggestive paper on the problem of the feeble-minded, with especial reference to the legal powers for their training and detention, was communicated by Mr. A. F. TREDGOLD. After referring to the provisions for detention in the Idiots Act of 1886 Mr. TREDGOLD pointed out that until the year 1899 there was no real attempt made to provide educational facilities for the mass of the feeble-minded. The Defective and Epileptic Children Act of 1899, which allowed local educational authorities to provide special classes and schools for these children, appears, like much other permissive legislation, to have resulted with occasional exceptions in failure. Nothing can illustrate this better than figures quoted in the paper to which we refer, supplied by the Education Board's inspector of special schools, from which it appears that educational facilities exist, in the shape of these schools, for 5909 children, whereas it is estimated that there are 81,314 feeble-minded children of school age in England and Wales. There are other defects in the Act, apart from its permissive character, to which attention is drawn and for which remedies are suggested. As regards powers of legal detention of the feeble-minded, whilst recognising the need for a considerable increase in the number of special institutions for the unimprovable, or but slightly improvable, imbecile, Mr. TREDGOLD advocates the permanent care in an industrial colony of all feeble-minded persons who are found after expiration of the training period to be incapable of self-support and all feeble-minded persons at large without proper control or proved guilty of offences against the law. A motion in these terms was carried unanimously by the conference. The county councils would be the natural authorities to provide and to maintain these colonies. With respect to the feeble-minded who have by training been rendered capable of self-support and are able to earn an honest living there are those who, taking an extreme view, would have these also permanently detained in the interests of society. It may be affirmed with considerable confidence that such a course would not be found practicable so far as this country is concerned. But that some degree of supervision of this class is highly desirable may be admitted. Mr. TREDGOLD suggests that this might be supplied by after-care associations and by the provision of voluntary boarding-houses and colonies, and the suggestion is worthy of consideration. A survey of the present position makes it evident that for an adequate solution of the problem of the care of the feeble-minded the powers already conferred by the law should be more widely utilised and ampler powers should be sought.

## Medical Teaching in the Metropolis.

THE brief announcement of the recent change which has been effected by the Council of King's College, London, merits the thoughtful consideration of all who are interested in the development of the teaching of medical students in the metropolis. It will also affect those who are concerned in the growth of the University of London as a teaching university, since it cannot fail to have an influence upon the cherished scheme of centralisation. The change is that which was foreshadowed in the address by Dr. T. BUZZARD at the commencement of the medical session; it is the recognition of the possibility and desirability of making a complete separation in the curriculum between the earlier subjects which can be taught only in well-equipped laboratories and the later clinical subjects which necessitate attendance in the wards and the out-patient rooms of a hospital. It has long been felt that many inconveniences attended the attempt to undertake clinical work before the examinations in anatomy and physiology had been passed. The premature introduction of living interest has been thought likely to divert attention and to delay the acquisition of the amount of detail required by the examining bodies. On the other hand, in many branches of clinical work it is obviously undesirable that assistance should be rendered by those who have just quitted the dissecting room. The question is one upon which opinions differ. Older practitioners may still be found who cling to the idea that the student should spend every available moment within the walls of a hospital but modern teachers and nearly all members of the staff of the hospitals maintain that, apart from considerations of the safety of the patients, there is little or nothing to be gained from perfunctory attendance without time for reading. Clinical observation must be combined with the judicious use of text-books and this combination is difficult, if not impossible, when examinations in anatomy and physiology are looming in the near distance.

Due recognition of these principles has doubtless influenced the Council of King's College in the step that has been taken. Hitherto matters of detail have been controlled by a medical board consisting essentially of teachers in the medical faculty and of the honorary staff of the hospital. With the projected removal of the hospital to Camberwell it was impossible for this arrangement to be continued and the Council, through Dr. BUZZARD, in October last announced a forthcoming change. This proposal has now taken shape in the division of the medical board, and consequently of the medical school, into two parts which will in future be completely distinct in everything except in their relation to the Council. In other words, the faculty for advanced medical study will have its own board and its own financial arrangements and in due season all its teaching will be conducted in connexion with the new hospital buildings. Similarly, the faculty for the preliminary and intermediate subjects will be controlled by a board composed of the professors of these subjects and its finances will be distinct from those of the faculty for advanced medical study. The removal of the hospital has doubtless been the main reason for this separation of the two faculties but the division is one which will commend itself to all who have followed the trend of opinion of recent years. The University of Cambridge has demonstrated the possibility of this division of studies and of examinations, since undergraduates in medicine ordinarily receive the whole of their clinical instruction in London after they have passed the preliminary and intermediate examinations. The development of this system in the metropolitan schools has been hampered by the idea that there was some advantage in teaching all subjects in all schools and the costliness of this needless multiplication has long been apparent.

Coöperation and concentration have frequently been urged as affording a means of reducing the burden; these suggestions, however, have not been generally adopted, though there is abundant evidence that a change of opinion is gradually growing and that many of the smaller schools are already considering the possibility of freeing themselves from the expense of maintaining laboratories and dissecting rooms.

In every state of transition some hardship is experienced and it can scarcely be expected that concentration can be effected without protest from those who fear loss of occupation during the period of waiting for promotion to hospital appointments. This anxiety is, we believe, based on misapprehension. Development is not confined to the earlier branches of medicine, it has been making rapid strides in connexion with clinical work and it is more than probable that in the near future every hospital will be found able to supply numerous junior appointments for those who desire occupation and opportunity of demonstrating their powers of teaching or of prosecuting original research. Meanwhile the complete separation of King's College from King's College Hospital in this formation of two new faculties must be regarded as a bold move at the present juncture, since the result must be that each faculty must be self-supporting. The expenses of the clinical faculty are comparatively small but in the absence of endowment the faculty for preliminary and intermediate subjects can only be maintained by a process of concentration. It is evident that the Council of King's College believes that this concentration will be favoured by the step that has been taken. Whether this is only a preliminary step to an increased connexion between the College and the University of London remains to be seen.

# Annotations.

"Ne quid nimis."

## THE INTERNATIONAL CONGRESS OF MEDICINE, LISBON, 1906.

A MEETING of the national committee of Great Britain and Ireland of the Fifteenth International Congress of Medicine to be held at Lisbon from April 19th to 26th, 1906, was held at the rooms of the Medical Society of London on Feb. 3rd. There were present, amongst others, Dr. F. W. Pavy (president of the national committee), Sir William S. Church, Sir Dyce Duckworth, Dr. D. Ferrier, Dr. J. F. Gordon Dill, Dr. H. Radcliffe Crocker, Dr. Boyd B. Joll, Mr. W. H. H. Jessop, and the honorary secretaries, Dr. Clive Riviere and Mr. D'Arcy Power. It was announced that the following gentlemen had undertaken to act as "rapporteurs" at the forthcoming Congress, as it was the wish of the Lisbon committee to make the "rapports" a special feature of the meeting: Dr. Stanley B. Atkinson, honorary secretary of the Medico-Legal Society and barrister-at-law, Spontaneous and Criminal Abortion in its Medico-Legal Aspect; Dr. A. K. Chalmers, medical officer of health of the city of Glasgow, the Administrative Control and the Technique of Public Disinfection; Mr. E. Treacher Collins, Ocular Tuberculosis; Dr. Ferrier, the Nature and Pathological Physiology of Tabes; Mr. K. W. Goadby, lecturer on bacteriology at the National Dental Hospital, the Treatment of Pyorrhœa Alveolaris; Dr. G. L. Gulland, the Classification, Origin, and Probable Rôle of Leucocytes, Mastzellen, and Plasma Cells; Dr. F. W. Mott, Cerebral Lesions in Psychoses of Toxic Origin; Mr. D'Arcy Power, Recent Advances in the Surgery of the Arteries and Veins; Dr. G. F. Still, the Spastic Affections of Childhood, their Classification and Pathogeny; Dr. J. F. Sutherland, Deputy Commissioner in Lunacy for Scotland, the Prophylaxis and Treatment of Habitual Criminals; and Mr. C. E. West, chief assistant in the aural department at St. Bartholomew's Hospital, Study of the Eleptogenous Action of Foreign Bodies in the Ear and of Post-nasal Growths. The subjects for the "rapports" were selected in every case by the executive committee at Lisbon. Sir Patrick Manson will open a discussion on Tropical Medicine. A letter was read from Messrs. Cook and Son containing a proposition to charter a first-class passenger ship to convey visitors to and from Lisbon, calling at Corunna, Vigo, and Oporto, and acting as a floating hotel during the Congress week. The suggestion was approved by the committee but Messrs. Cook and Son were desired to ascertain the exact position of the anchorage in the Tagus in order that inquiries might be made locally as to its suitability both from the point of view of the hygienic surroundings and of distance from the seat of the meetings of the Congress. Letters were read from Dr. J. C. Ogilvie Will and from Dr. F. J. Sutherland giving the results of certain inquiries which they had made in regard to the housing of those who did not wish to go by sea and to remain on the boat. It appeared from these inquiries that rooms could now be obtained at a moderate price at Netto's Hotel, Cintra, about 40 minutes by train from Lisbon. The hotel is well spoken of and the proprietor says that at present he has 16 bedrooms, most of which can be used by two persons. It appears imperative, therefore, that those who intend to go to the Congress and do not wish to depend on the efforts of the local committee to obtain lodgings should at once take the opportunity of reserving rooms. Delay is likely to lead to the same disastrous consequences as at Madrid.

## "THE CAUSE AND PREVENTION OF APPENDICITIS."

UNDER this heading there appears in the *Nineteenth Century* for January an article which professes to have solved the problem of the etiology of appendicitis. The author of this communication strongly denounces the use of "Hungarian waters, aperient salts, and liver pills." He then remarks: "It is natural to ask what have aperient waters and salts to do with appendicitis? To that a very true answer is that the action of saline purgatives is to cause a flow of water through the intestinal canal. This passes off quickly, but alas! it leaves the solid portions to accumulate in the cæcum at the right side, near the appendix, where the small intestine ends and the large one commences. The solid portions left in the colon become more and more putrid, cause obstruction, and infect the appendix." The meaning of the above sentences is somewhat ambiguous but we conclude that it is intended to convey the idea that those individuals who habitually take laxatives to insure an action of the bowels are liable to fæcal collections in the cæcum which produce inflammation of the mucous membrane of the bowel and so cause appendicitis. We venture to express an emphatic opinion that there is no basis for this statement either on pathological or clinical grounds. Any practitioner who has had experience in the post-mortem room knows that the contents of the small intestine are liquid and it is not until the colon is reached that the fæcal matters become solid. It is most unusual to find solid fæcal accumulations in the cæcum; yet this condition is distinctly implied in the remarks which

we have quoted above. Further, in post-mortem examinations of those who have died from appendicitis, although small concretions may be found in the appendix, no large mass is found in the colon as would be the case if the etiology which we are considering were the correct one. Such a causation of appendicitis is also contradicted by clinical experience. The age at which appendicitis usually occurs[1] is from ten to 20 years, which is not the period of life at which such purgatives are generally habitually taken. Again, constipation is more frequent among women than among men and the former are more addicted to the habitual use of purgatives, yet appendicitis is nearly four times as common in men as it is in women. It is certainly desirable to overcome constipation by natural means, notably by diet, if possible. But there are numerous cases in which artificial stimulus to the intestines is absolutely necessary and in such circumstances "aperient waters and salts" are most valuable remedies.

## A LUCKY ESCAPE.

AT Southport police-court recently a grocer who had attempted to vary his stock-in-trade by importing a freshly killed pig from Ireland had a narrow escape. The pig, according to the defendant's evidence, which there was no reason to doubt, arrived at his place of business in good condition. A small portion of it was sold by him as fresh pork on the day of its delivery, a Friday, and on the Saturday, and some pieces were given by him to men in his employment. On the following Wednesday he found that the meat was high and in his defence he swore that he then refused to sell some to a customer. Two days afterwards, however, the remainder of the pig was still in his shop, where it was found in the course of his round by an inspector of nuisances in a putrid condition; an order for its destruction was obtained and a summons was taken out against its owner. There was one question only for the bench to determine, the condition of the meat and the responsibility of the defendant for its presence where it was being undisputed; that is to say, the magistrates were asked to decide whether or not it was exposed for sale as human food, the burden of establishing the fact that it was not there for such a purpose resting on the defendant. On the one hand it was proved that the meat was in the shop, in a tub, and that it was standing surrounded by other comestibles undoubtedly intended for sale as food, and it was also alleged by the prosecution but not admitted by the defence that there was a piece lying on the counter. As an answer to this the defendant swore that finding the meat was bad he put it in a tub by itself, intending to sell it for the value of the fat to a marine store dealer, and that he had had no opportunity of carrying out this innocent design before the inspector's appearance. There was corroboration as to his allegation that he was without experience in dealing with such goods and he explained the circumstance that the pork was covered with salt by saying that he had put salt on it in order to diminish the smell which it emitted. The awkward aspect of the case for him arose out of the fact that if he had really desired to be rid of so very offensive an addition to his other wares as a tubful of decaying flesh he could have placed it in the yard at the back of his shop and that its presence where it was was likely to be harmful to his ordinary business, apart from the risk of a visit from an inspector of nuisances. At the same time the condition of the meat was apparently so obvious that no one at all events was likely to buy it without appreciating the fact that it was in very bad condition, and having regard to all the circumstances the magistrates made use of a well-worn phrase and, allowing the defendant "the benefit of the doubt," dismissed the summons against him. Even after such an escape he must have gone home a poorer if not a wiser man and others in his locality who read of what happened to him in the full report accorded to the case by the local press may profit by his example. At least they should learn that persons who find themselves in the possession of foodstuffs wholly unsuited for human consumption will, if they are wise, do all in their power to place themselves forthwith beyond the reach of possible suspicion. The decision upon such an occasion is one of fact and, as has been stated above, when the other points have been proved the person charged has to show that the goods were not there to be sold as human food—that is to say, in this respect it is for him to establish his innocence and not for the prosecution to prove his guilt.

[1] System of Medicine, by Professor Clifford Allbutt, vol. iii., p. 896.

## JANUARY AT HOME AND ABROAD.

THE month of January must have been a great disappointment and a source of great discomfort to all except the most robust who travelled south to escape the rigours of the coldest period of the year. Without going so far as to say that the cold and rough weather of January was unprecedented in the south of Europe it can safely be affirmed that it was the most severe during the present generation. Nor was the cold confined to any particular locality but while all the more sheltered spots naturally suffered the least none of the winter resorts escaped a temperature far below the normal, besides experiencing unpleasant falls of cold rain, sleet, and snow and a sky usually very cloudy or quite overcast. In studying the appended table it is seen that Nice and Biarritz each had a lower minimum temperature (recorded by the screened thermometer early in the month) than our own inland places of Bath, Nottingham, and London, while that at Florence was only one degree higher than at Bath and Nottingham and that at Rome just equal to London (St. James's Park). Even at Naples and Palermo there were several degrees of frost, while at Algiers and Lisbon the thermometer descended to within two degrees of the freezing point. At Naples frost was registered on seven nights, at Nice on ten, at Rome on 12, and at Florence on as many as 19. In London there were only 16 frosts, at Torquay two or three, and at Scilly none. The mean temperature for the month was highest at Algiers, Palermo,

*Temperature and Rainfall.*

| Stations. | Highest temperature. | Lowest temperature. | Mean maximum. | Mean minimum. | Mean temperature. | Total rainfall in inches. | Number of hours of sunshine. |
|---|---|---|---|---|---|---|---|
| | Degs. | Degs. | Degs. | Degs. | Degs. | | |
| Nice ... ... ... | 70 | 18 | 50 | 34 | 42·0 | 0·43 | — |
| Biarritz... ... ... | 63 | 18 | 49 | 36 | 42·5 | 2·05 | — |
| Florence ... ... | 57 | 20 | 44 | 28 | 35·5 | 0·56 | — |
| Rome ... ... ... | 59 | 23 | 49 | 34 | 41·5 | 0·70 | — |
| Naples ... ... ... | 58 | 26 | 48 | 36 | 42·0 | 1·92 | — |
| Palermo ... ... | 60 | 28 | 55 | 39 | 47·0 | 2·18 | — |
| Algiers ... ... ... | 66 | 34 | 59 | 47 | 53·0 | 4·40 | — |
| Lisbon ... ... ... | 64 | 34 | 54 | 43 | 48·5 | 1·97 | — |
| Paris ... ... ... | 50 | 12 | 41 | 27 | 34·0 | 0·64 | — |
| London ... ... ... | 55 | 23 | 45 | 32 | 38·5 | 1·15 | 31·2 |
| Scilly Isles ... ... | 54 | 38 | 49 | 42 | 45·5 | 1·02 | 61·7 |
| Jersey ... ... ... | 54 | 25 | 47 | 38 | 42·5 | 2·04 | 95·3 |
| Torquay ... ... | 56 | 29 | 48 | 38 | 43·0 | 1·42 | 87·3 |
| Bath ... ... ... | 54 | 19 | 44 | 32 | 38·0 | 0·59 | 58·0 |
| Nottingham ... | 53 | 19 | 43 | 32 | 37·5 | 0·69 | 54·7 |

and Lisbon but at all the other foreign resorts it was lower than at the Scilly Isles, Torquay, and Jersey; at Florence it was three degrees lower than in London and two degrees lower than at Nottingham, one of the coldest parts of England. At almost all the foreign stations the means of the minima were inferior to those on our own south-west coasts; at Florence the mean minimum was ten degrees lower than at Torquay and Jersey and 14 lower than at the Scilly Isles. The nights at Scilly were, in fact, much warmer than the combined day and night at Florence, had just the same temperature as the corresponding figure at Nice and Naples, and were within half a degree of that at Biarritz. The highest temperature of the month was recorded at Nice and occurred immediately after the severe cold at the beginning of the year. The average day at Rome and Biarritz had the same degree of warmth (49 degrees) as the Scilly Isles, while that at Naples just equalled Torquay. With regard to equability none of the continental resorts can compare with Scilly, Jersey, and Torquay, and few of them were as equable as Nottingham. The precipitation from the clouds, composed largely of sleet or snow, was only excessive at Algiers; in this country it was (except at Jersey) much less than during an ordinary January. At all the British stations the number of hours of sunshine was far above the average, Torquay and Jersey being particularly bright.

## WOMEN INSPECTORS OF MIDWIVES AND WOMEN HEALTH VISITORS.

IF the regulations laid down by the Central Midwives Board under the Midwives Act, 1902, are to be carried out properly a considerable amount of work will have to be done in regulating, supervising, and restricting within due limits the practice of those midwives who may be certified under the Act. In large towns or country districts where there are many midwives engaged in practice it will hardly be possible for the medical officer of health adequately to perform these duties. In a report presented by its medical officer to the Durham county council the question of the appointment of women inspectors of midwives and women health visitors is considered. As the result of his inquiries Dr. T. Eustace Hill finds that in ten counties a woman inspector of midwives has been, or is about to be, appointed and in two others the necessity of such an appointment is recognised by the medical officer of health; in two a scheme is being prepared for the supervision of the midwives by the local medical officers of health acting under the county medical officer; in one the county medical officer recommends that the work should be carried out by an assistant medical officer; and in five counties so far no action has been taken in the matter. The chief duties of such women inspectors will be to see that the rules of the Central Midwives Board are duly observed by the certified midwives and that the registers and records as required by the Act are properly kept by the midwives, and, in addition, to exercise an educational influence on the older school of midwives whose knowledge of their duties is far from being as perfect as it might be. Obviously such women inspectors must not only themselves be certified midwives under the Act but should also hold a certificate of midwifery from one of the bodies recognised by the Central Midwives Board. The appointment of women health visitors has met with such marked success in Birmingham and other towns in which they have been appointed that it is to be hoped they will soon be at work not only in all towns but also in the country districts. The work of an inspector of midwives and a health visitor could in many instances be carried out by the same person and there should be no difficulty in finding women sufficiently well trained to fill such posts. The work of a woman health visitor would mainly consist in calling at the houses of the poor and in giving advice as to the importance of cleanliness, fresh air, and ventilation, as to the feeding and clothing of young children, as to the prevention of the spread of infection, and many other matters which affect the health of the poorer classes. In Birmingham and St. Helens the health visitors are supplied with a list of the registered births and they visit the houses in the streets inhabited by the poorer class with a view to see if the infants are properly fed. As Dr. Hill points out, it is a melancholy fact that while during the last 20 years the general death-rate has progressively declined the infantile mortality has not shared in the decline to any appreciable extent. Since the infantile mortality has not been influenced by the improvement in the sanitation and in the water-supply which has taken place in most of the larger towns during this time it must be due to other conditions which so far have undergone no alteration. There can be no doubt that the most important of these is the gross ignorance which prevails amongst the poor as to the proper method of feeding their young infants. Women health visitors could do much to train poor mothers in the management and care of their young children. By the delivery of "Health Talks" in elementary schools they could also impress upon the children attending them the value of fresh air, ventilation, and personal cleanliness. Such "Health Talks" already are being given in some of the elementary schools throughout the country with a very marked improvement in the condition of the children. We hope that the Durham county council will adopt Dr. Hill's suggestion to appoint two ladies as inspectors of midwives and health visitors and that other county councils will see fit to adopt the same means of insuring the efficient working of the Midwives Act and of lessening the infantile mortality which in many of the larger towns of the country is still most deplorably high.

## PNEUMOCOCCIC MEMBRANOUS BRONCHITIS IN A CHILD.

AT the meeting of the Société Médicale des Hôpitaux de Paris on Dec. 9th, 1904, M. Menetrier described a case of membranous bronchitis in a child, aged two years, which in consequence of the rarity of the disease at this age apart from diphtheria is important. The child was taken to hospital on March 1st, 1904. For two months he had expectorated arborescent membranes after fits of coughing and suffocation. There were two other children in the family, aged respectively three and four years, who were in good health. The patient contracted bronchitis when he was eight days old after exposure to cold and the attack lasted for more than three months. At the age of four months he had another attack which lasted the same time. In January, 1904, he had a third attack which, like the preceding ones, was attended by fever and cough without expectoration. But the cough was more severe and on Feb. 7th he expectorated, after a violent fit of coughing in which suffocation seemed imminent, a mass of whitish membranes which on being spread out in water were found to consist of ramified tubes. Since that time fits of coughing occurred nearly every day but only every three days were membranes expectorated. The child lost appetite and wasted. On examination he was pale and thin. The throat was normal. The upper two-thirds of the left chest in front and behind were slightly dull on percussion and the breathing there was bronchial and accompanied by large subcrepitant râles. The temperature was normal. Iodide and inhalation of creasote in boiling water were prescribed. When he was seen again on March 5th he was much better, the cough was diminished, and he was recovering appetite. He had expectorated membranes on March 1st but not since and

he had had no attacks of suffocation. The dulness and the bronchial breathing were still heard but no râles. No more membranes were expectorated and after two months he was said to be quite well but no further opportunity for examination was given. The membranes produced at the first examination looked somewhat like cooked macaroni and formed a ramified mould of the bronchial tree of a whole pulmonary lobe without any central cavity. The membrane was firm, like that of diphtheria. It contained pneumococci in large numbers and yielded the pneumococcus in pure culture. A mouse inoculated with it died from pneumococcic septicæmia. The membrane was composed of stratified layers of fibrin, leucocytes, and cubical epithelial cells of the type found in the capillary bronchi. Nowhere was there any ciliated epithelium of the type found in the larger bronchi. Evidently the capillary tubes were the seat of the disease.

## MAXIM GORKY ON UNDERGROUND BAKERIES.

THE arrest, on what appears to be but a trivial pretext, of one of the most eminent men of letters ever produced by Russia naturally provokes protests from all parts of the civilised world. In his realistic writings Maxim Gorky describes what he has himself endured. Occasionally there are details given which show how much there is to be done before Russia can compare favourably with Western nations in regard to sanitary matters. For instance, in his sketch entitled "Twenty-six and One" he relates that in his youth he worked in a baker's shop where 26 toilers were sweated to enrich one master baker. These 26 "living machines" were cooped up in the sludge and murk of a damp cellar. There they kneaded dough to make cracknels and biscuits. The windows of the cellar were coated with flour dust inside and protected outside with wire netting. The light could not penetrate and as for the air these windows, such as they were, stood close to, and on the same level as, a manure heap and pit the wall of which had grown green with damp and foulness. In England the law declares that no bakehouse shall be near any open drain whatsoever. The workers carried particles of manure on their boots into the evil-smelling underground bakery. This is how Maxim Gorky describes the bakehouse:—

> We were stifled and crushed living in this stone box under the low heavy ceiling, which was stained with smoke, black, and coated with cobwebs. We were weary and heart-sick within the thick walls which were dyed with blotches of dirt and mildew. We were wont to rise at five o'clock in the morning before we had a night's sleep and at six we sat down stupid and listless at the table to shape cracknels of dough prepared for us by our mates who had toiled while we were sleeping. And thus the live-long day, from early morning till ten at night, we kept it up. ..... We kept rolling out dough and making cracknels, moistening them with our sweat. We loathed the very sight of our handiwork, turning from it with nausea, nor would we ever eat of anything that left our hands, preferring to the cracknels coarse black bread.

Evidently there were no inspectors of nuisances in that part. Nor was there any organisation among the journeymen bakers or Maxim Gorky would have been paid more than his board and the munificent sum of 5*s.* per month. If such are the conditions of labour it is not surprising that the death-rates of Russian towns are abnormally high.

## OVARIOTOMY IN YOUNG CHILDREN.

Dr. J. Hope Reford has recorded in THE LANCET of Feb. 4th, p. 322, a very interesting case of ovariotomy undertaken in a cottage on a girl, 11½ years of age. The tumour, which was growing from the left ovary, contained about one and a half pints of slightly blood-stained fluid and was a dermoid cyst. The child made a good recovery. Cases of ovariotomy in young children are not very uncommon and Mr. J. Bland-Sutton in his work on Surgical Diseases of the Ovaries has published a table of 100 cases of ovariotomy in girls under 15 years of age, and of these no less than 39 were younger than the patient in the case recorded by Dr. Reford. 41 of the cases were operated on for simple cysts and adenomata of the ovary with three deaths, 38 for dermoid tumours with five deaths, and 21 for sarcomata with seven deaths. In seven of these latter patients the subsequent progress of the case has been ascertained; four of them died from recurrence of the growth within a year, one was alive and in good health a year later, one two years later, and one died two years after the operation, the cause of death being uncertain. Since the publication of these tables other cases have been recorded. Mr. F. S. Eve has successfully removed a suppurating ovarian cyst measuring one and a half inches in diameter from an infant 22 months old. The youngest child from whom an abdominal cystic tumour has been removed would appear to be a case recorded by Mr. D'Arcy Power who operated successfully for a simple cyst of the ovary on an infant only four months old. Dr. John Campbell operated successfully upon an infant only seven months old and removed a dermoid tumour growing from the left side. Dermoid tumours appear to be especially frequent in young children and ovarian sarcomata are met with more frequently before puberty than at any other period of life but as Mr. Bland-Sutton points out there is no example of a papilliferous or parovarian cyst amongst the cases collected by him. Mr. Alban Doran has described small cystic tumours in the ovaries of the fœtus and in a child born alive at the seventh month he found a sarcoma of the ovary. No Graafian follicles could be detected in this case. The very successful results which usually follow such severe operations in young children are no doubt in part to be explained by the absence of any mental apprehension as to the result of the surgical interference. It is interesting to note how often in the diagnosis of such cases the condition has been mistaken for one of tuberculous peritonitis and this is especially liable to be the case when the pedicle of the tumour has become twisted.

## SOILS AND THE DISTRIBUTION OF DISEASE.

ALTHOUGH it is generally admitted that there is an intimate connexion between the health of a locality and the nature of the soil found within its boundaries the character of the relationship is decidedly obscure. This obscurity will, perhaps, not be diminished by a report which Mr. H. B. Woodward, F.R.S., contributes to the recently issued "Summary of Progress of the Geological Survey of the United Kingdom and Museum of Practical Geology," though his conclusions are not the less valuable on that account. It has been customary to study the distribution of diseases with the help of small geological maps—e.g., those on a scale of four miles to an inch alluded to by the late Mr. Alfred Haviland in his article dealing with this topic which appears in Vol. I. of Allbutt's "System of Medicine." In his account of certain investigations into the constitution of the soil at the famous Rothamsted estate, whence have emanated so many scientific results of the greatest importance to botany and agriculture, Mr. Woodward incidentally refers to certain points in the interpretation of the maps published by the Geological Survey which are worthy of the attention of medical topographers. Originally, it was assumed that the soils and the subsoils were the result of the decomposition, through atmospheric agencies, of the rocks directly below them and the maps marked out only the areas in which the various rocks came to the surface or "outcropped." This was fairly satisfactory in Cornwall and Devon where the survey first began operations but as the work extended to other districts it was found that the ground was largely covered by superficial deposits increasing in amount on the whole towards the north of the country. To these deposits, relics of the ice-sheet which once covered the land, the term "drift" was applied. For a time they were ignored but when it was found that the "drift" covered

great areas and that it was often 100 feet thick or more it was realised that maps which did not take account of its existence were misleading. A correct representation of the "drift" was found to be impracticable on maps of even a scale of one mile to an inch and it was therefore necessary to construct maps of six inches to one mile. Maps of this latter kind can be consulted at the Geological Museum at Jermyn-street and it will be obvious from what has been said above that only such maps are worthy of serious consideration in attempting to elucidate the dependence of pathological conditions upon the geological features of a given district. Nor do the difficulties of the problem end here. The maps show only the nature of the subsoil and Mr. Woodward states that "they cannot be taken as indicating in more than a general way the actual distribution of soils." He shows that soils are far from being "sedentary" and that those derived mainly from one formation may be transferred as the results of landslips, downwashing, or the action of the wind to the surface of another and may thus have no simple relation to the underlying strata. We do not suppose that anyone will have the temerity to dispute Mr. Woodward's contentions in a matter of this kind and can only hope that he or some other worker on the survey may in a subsequent report throw some much-needed light on this intricate subject.

## BLOOD PRESSURE IN MAN.

ON Feb. 3rd, at the Royal Institution, Professor T. Clifford Allbutt, assisted by Dr. W. E. Dixon, demonstrator of pharmacology at Cambridge, gave a lecture on Blood Pressure in Man. The first part of the lecture was occupied by a sketch of the physiology of the subject. It was pointed out that as fluids are incompressible elasticity is obtained by the structure of the arteries and that the aorta, being larger in proportion than other arteries, acts the part of a reservoir, as does the air bag of the bagpipes, to equalise the pressures. The construction of the arterial tree is such as to facilitate the distribution of the blood with the least disturbance of pressures. Nevertheless, he showed by the effects of muscular exertion, cold baths, and so on, that the variations of pressure in man are large and herein differ from the stability of the temperature of the body. But a small fraction of the heart's energy is employed upon the velocity of the blood, the chief expenditure being in overcoming friction. The friction depends on two factors—the dimensions of the vessels and the viscosity of the blood which is about four times that of water. Dr. Dixon exhibited with the lantern a rabbit's heart, under artificial circulation, attached to a lever and registering its curves upon a smoked glass. To this heart drugs were applied—adrenalin, atropine, pilocarpine, nicotine, and so forth—by which the pressures were modified. The various instruments for registering pressures in man were then exhibited—three of them in action—and projected upon the screen. The lecturer then proceeded to the pathological applications of these principles, illustrating them in shock and collapse, under chloroform, hydrocyanic acid poisoning, the nitrites, and so forth. Dr. Dixon showed the action of such changes on the screen. Diagrams were exhibited of the remarkable observations of Kocher and Cushing on the enormous increase of pressures set up during compression of the brain in order to counteract the emptying of the vessels of the medulla by the intracranial pressure and thus the danger of bleeding in apoplexy had been made manifest by those observers. Finally, the importance of integrity of the arterial mechanism was insisted upon and the effect of toxic matters, of hard labour, and of senile changes was illustrated. The tendency in many persons to rises of arterial pressure in middle life was shown as well as the injury done to the vessels thereby. As these rises, if taken in time, may be counteracted the lecturer urged upon all persons between 45 and 55 years of age to have their arterial pressures estimated by their physicians every four or five years in order that this peril to health and life may be averted. Such rises may occur also in old persons in whom the arteries have undergone senile degeneration and in them are the more perilous, but in most cases, if discovered in time, they can be readily counteracted.

## "DR." BELL AND THE POST-OFFICE.

WE are constantly being asked whether we can do anything to stop the circulation of a dirty little pamphlet that continues to be sent out by a quack living in Wardour-street under the name of "Dr. Bell." Some few years ago "Dr. Bell's" name was "Henry Walters" and some few years before that again he was "Dr. Rae" or "Ray," who possessed an American doctor's degree. We shall be obliged if any of our readers who may receive one of "Dr." Bell's pamphlets will forward it to us, *together with the wrapper or envelope* in which it may have been sent, at as early a date as possible after its receipt.

## THE GILLSON SCHOLARSHIP IN PATHOLOGY.

THIS scholarship is of the annual value of £90 (tenable for one year) and was founded in accordance with the will of the testator, William Edward Gillson. The scholarship is open to Licentiates of the Society of Apothecaries of London, or to candiates for the Society's diploma, who obtain such diploma within six months of their election to the scholarship which is awarded for the encouragement of original research in connexion with any branches of pathology. Candidates must be under 35 years of age. The holder is eligible for re-election provided that he satisfies the adjudicators that he has carried out well-directed research during his year of tenure; but in no case can the scholarship be held by the same person for more than three years. Candidates competing for this scholarship are required to send in their names, with testimonials, by Feb. 28th, to Mr. Frank Haydon, secretary to the court of examiners.

## TUBERCULOSIS IN NOTTINGHAMSHIRE.

WE have received a copy of the annual report of the medical officer (Dr. Henry Handford) to the county council of Nottinghamshire for the year 1903. The report has been most carefully compiled and presents some interesting information. The most striking feature concerning the mortality statistics is the fact that for the first time the rural death-rate exceeds the urban. This is remarkable and is the more accentuated by the fact that the infantile deaths are more numerous proportionally in the urban than in the rural districts and, moreover, account for more than one-quarter of the total deaths. The altered relative position of the urban and rural death-rates appears to be mainly due to a decrease in the urban rates; the rural rate only increased 0·3 per 1000. Dr. Handford asserts that it is difficult to avoid the conclusion that the urban districts are reaping the advantage of their larger expenditure in measures of water-supply and general sanitation. The number of deaths from pulmonary tuberculosis was 262, or 0·88 per 1000 of the population. In the urban districts there were 139 deaths, or 0·8 per 1000, and in the rural districts 123 deaths, or 1·01 per 1000. The deaths from tuberculous disease of other organs than the lungs were 150 for the whole county, or 0·5 per 1000 persons living. In the urban districts there were 93 deaths, or 0·53 per 1000, and in the rural 57 deaths, or 0·46 per 1000. These figures show the strange result that in 1903 in the county of Nottingham pulmonary tuberculosis was more fatal in the rural districts than in the urban. "Other tuberculous

diseases" were only very slightly less fatal, the balance in favour of the rural districts being only 0·07 per 1000. Dr. Handford publishes an interesting table showing the average death-rate from pulmonary tuberculosis for the past ten years in the various urban and rural districts of the county. It is proved that the death-rate from this disease has not been materially influenced by the geological character of the country, the districts most severely affected being of varying geological nature. Conditions of housing and sanitation appear to have been of most importance. These statistics can only be taken as being suggestive; investigations carried out over larger areas and over many counties would be required before any definite conclusions could be drawn from them.

## THE TREATMENT OF PULMONARY TUBERCULOSIS BY CYLLIN.

Mr. W. C. Lodwidge informs us that he has treated eight cases of pulmonary tuberculosis by inhalations of cyllin. Some of the patients were in an advanced stage of the disease. In every case some improvement was obtained, as evidenced by a steady increase in weight, a diminution in the quantity of the sputum, and relief from cough and night sweats. Mr. Lodwidge believes that the drug acts primarily by destroying the pyogenic organisms and secondarily by exercising an action on the tubercle bacilli. He has made a careful systematic study of the various drugs which have from time to time been prepared as "inhalants" for the treatment of pulmonary tuberculosis. He has also calculated the relative bactericidal value of some of these drugs when tested against vigorous cultures of the bacillus typhosus. He finds that cyllin is 12 times as powerful as carbolic acid. Further, cyllin may be inhaled without any deleterious results. The number of cases recorded by Mr. Lodwidge is small but the results which he has obtained warrant a further trial of the remedy and observations carried out on a more elaborate scale than has been as yet accomplished.

## SCHOOL DRESSING ROOMS.

AMONG many matters of interest to be seen at the Exhibition of School Building and Furnishing Appliances, open in the great hall of the University of London during the continuance of the Conference on School Hygiene organised by the Royal Sanitary Institute of Great Britain, few bear more emphatic testimony to the extent and character of modern improvements in the surroundings of the schoolboy than the plans lent by Mr. Sargant to illustrate the changing and dressing rooms now in course of construction at Oakham. Without repeating Mr. Kipling's substantives we may use one of his adjectives without offence and may admit that the boy who comes in from football is always muddy—and generally wet. If his clothes are to be distributed over his bedroom there will be a bad time for somebody in the way of collecting and drying them and the general state of that bedroom will not be improved. At schools, of course, the consequent difficulties are raised to the *n*th power and Mr. Sargant has been equal to the emergency in devising contrivances for meeting them. His plans show an arrangement under which each dormitory for 16 boys has attached to it a changing and washing room devoted solely to these purposes. Every such room contains a central range of 16 basins supplied with hot and cold water and discharging into a suitable channel. Benches run down each side of the room and behind these are 32 drying lockers, each 1 foot 3 inches by 11 inches by 2 feet 6 inches, into which football things must be put. Pegs for hanging up clothes are fixed over each locker. Sitz and shower baths are provided in the same room, supplied with water which can be made warm but not hot. There are also depositories for shoes and no boots are allowed to be taken into the dormitories. The general effect is to furnish all necessary facilities for the maintenance of the bodily cleanliness which is the first of sanitary virtues, to preserve neatness and order in the dormitories, and to prevent any portion of their cubic space from being occupied by dirty clothing. Mr. Sargant further claims that the saving of labour effected by the arrangement is a sufficient compensation for the cost of the first outlay.

## DIFFUSE ENCEPHALITIS DUE TO THE PNEUMOCOCCUS.

IN recent years the widespread extent of the lesions which may be produced by the pneumococcus has been shown but in only a limited number of cases has infection of the brain been observed. In the *Boston Medical and Surgical Journal* of Dec. 15th, 1904, Dr. W. N. Bullard and Dr. F. R. Sims have reported the following case. A man, aged 50 years, was admitted to the Boston City Hospital under the care of Dr. Shattuck. The patient had been in good health until his present illness which had confined him to bed for a month. He had a cough and expectorated thick white sputum, occasionally tinged with blood. On admission he was under the influence of alcohol and was delirious. Bronchitic râles were heard in the chest and there was dulness at the bases of the lungs. There was a scar on the glans penis. Three days later he was comatose and cyanotic and there was left hemiparesis. The respiration was at times rapid and superficial and sometimes suggested Cheyne-Stokes breathing. The pupils were contracted. The left limbs were flaccid; the right were rigid. The morning temperature was 102° F., the pulse was 72, and the respirations were 43. On the sixth day after admission the cyanosis was increasing and there was profuse perspiration. The pupils were contracted and the left was slightly smaller than the right. Death took place on this day. At the necropsy yellowish white plugs could be expressed from the larger bronchioles and the bronchi contained purulent secretion. The left pulmonary artery was occluded by a partially organised adherent clot. The dura mater was thickened and adhered to the calvarium and to the pia mater along the longitudinal fissure. The pia mater about the superficial veins of the sulci was thickened. The brain was asymmetrically swollen. The right parietal lobe was softer than the remainder of the brain. The right centrum ovale and the subcortical projection system were œdematous and showed numerous punctiform hæmorrhages; the left centrum ovale showed slight œdema and a few hæmorrhages. Microscopic examination showed pneumococci in the viscera and in the œdematous areas of the brain. There were pneumococcic septicæmia, acute broncho-pneumonia, and diffuse encephalitis with hæmorrhages. The lesions in the brain consisted of accumulations within, and surrounding, the adventitia of the vessels of large numbers of phagocyte granule cells of the type found in meningitis and cerebral softening and of small numbers of lymphoid and plasma cells with a few polynuclear leucocytes and eosinophiles, solution and fatty changes of the myelin in the surrounding tissue, proliferation of the neuroglia cells, and œdematous changes in the cortical cells. Acute non-purulent encephalitis was first brought prominently forward by Strümpell in 1890, though he previously, in 1884, described the condition in children. Cases were subsequently described by Schmidt, Fürbringer, Königsdorf, and others. Many cases occurred after an attack of influenza or during an epidemic of the disease but in spite of several attempts the influenza bacillus could not be cultivated. The best description of the disease has been given by Oppenheim. It may come on suddenly or may be preceded by headache, vertigo, nausea and vomiting, general weakness, apathy, and

insomnia. A rigor may occur. The apathy deepens into somnolence which is likely to terminate in coma which is usually accompanied by restlessness and delirium. General convulsions may occur. There may be hemiplegia, monoplegia, or aphasia. The first case in which pneumococci were found was described by Hochalt in 1897.

## HYGIENE AND THE METROPOLITAN POLICE COURTS.

LONDON has deservedly a reputation for the efficiency of its sanitary administration and there is no better tribute to the fact than its health returns and its mortality rate. Dirt-engendered diseases are rarely in material evidence and yet the metropolis is not without its dirt spots, amongst which may be reckoned most of its police courts. The interior of a metropolitan police court, sanitarily speaking, is very seldom prepossessing, the walls and benches are grimy, and the accommodation rarely affords the calculated "health space." The experience of those who occasionally attend a metropolitan police court is invariably disagreeable. There is usually present a very large representation of the "great unwashed" and it is with these that the medical man, the man of law, the expert witness, and other respectably inclined persons are compelled to "hob-nob." The result may not be infection in the sense of a definite disease being contracted (though that may be likely) but contact with verminous persons may easily defeat cleanly intentions. To the person of clean habits the contemplation of such a contingency is unpleasant and yet in a crowded police court, as when a case of considerable public interest is being heard, that person is bound "to rub shoulders" with the unclean. The bacteriology, not to say entomology, of the average metropolitan police court is doubtless appalling and it is a scandal that healthier and more commodious surroundings, in which due regard is given to the division of space according to the status of the individuals present, are not provided for the purpose. Ventilation is nearly always a negligible quantity as is evident from the fœtor which commonly pervades a court. Of course no amount of ventilation will prevent the accumulation of dirt and grime, only habitual washing with soap and an antiseptic will do that, but we may at least demand a freedom from frowsiness in the air. Excellent progress has been made in introducing the sanitary method of administering the oath in courts—namely, by substituting for kissing the oft-kissed book the Scotch method of uplifting the hand; but that sanitary gain is sadly discounted when everything else is in a filthy insanitary state—the benches, the desks, the floors, the walls, and, above all, when cleanly disposed persons are compelled to be in close contact with those who show unmistakeable and revolting signs of sanitary neglect. The laws of the land have their demands upon the citizen and none the less the great laws of health, of which one is cleanliness, and a subpœna might justly be resented, we venture to say, which calls for attendance in an unhealthy and filthy environment.

AT the meeting of the Royal Medical and Chirurgical Society on Feb. 14th a paper will be read by Dr. W. Aldren Turner on the Influence of Stigmata of Degeneration upon the Prognosis of Epilepsy and a joint paper by Dr. A. E. Garrod and Dr. Ll. Wynne Davies on a Group of Congenital Malformations, including almost complete absence of the abdominal wall, and abnormalities of the genito-urinary apparatus. At the meeting on Feb. 28th there will be a discussion, introduced by Sir Frederick Treves, upon the Subsequent Course and Later History of Cases of Appendicitis after Operation. A detailed notice of the arrangements made for this discussion will be published next week.

THE death is announced of Mr. Luther Holden in his ninetieth year. He was the senior Fellow of the Royal College of Surgeons of England, having passed the examination in 1844. We hope to publish an extended notice of his career in a future issue.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Feb. 10, 1827.

DIED at his house in New Broad Street, on Monday, the 29th ult., THOMAS ROBSON ELLERBY, Esq., Surgeon, ætat, 37.[1]

Those who had the pleasure of Mr. Ellerby's acquaintance, will long regret his loss; he was a man of considerable talent in his profession, and his conduct was characterised by strict integrity in the practice of it. He was an ardent friend, and an agreeable companion.

Mr. Ellerby was a valuable Member of the COMMITTEE of Surgeons, who will experience some difficulty in adequately filling up the vacancy occasioned by his lamented death.

In the pages of THE LANCET we have often recommended, as a means of removing from the public mind a portion of the prejudice against human dissections, that SURGEONS, who, of all others, are the best acquainted with the utility of the practice, should insert a clause in their "last will and testament," directing the dissection of their bodies. Mr. Ellerby was a warm approver of this proposal, and frequently expressed his admiration of it in the most public manner, at the same time declaring that it was a practice he should adopt in his own will, and that he sincerely hoped his relatives would see that his wishes were fulfilled. That he strictly adhered to this resolution, the following extract from his will, executed only two or three days before his death, will abundantly show.

"For the guidance and instruction of those whom I may appoint a the executors of this, my last will, I do here set down what my wish is, concerning the disposal of my body:—After my decease, I request to be placed in a very plain shell or coffin, with all possible dispatch; that my friends and acquaintances be assembled as soon as convenient. Preferring to be of some use after my death, I do will, wish, beg, pray, and desire, that at the conclusion of such meeting of my friends and acquaintances, and at which I particularly wish those medical friends who have so kindly attended me through my long illness to be present, that the shell or coffin in which I may be laid, be placed in a plain hearse, with directions for it to be taken to Mr. Kiernan's, or some dissecting-room of an approved anatomical school, followed simply by the medical men in one or two plain coaches, and that they do there examine it to their full satisfaction, taking away such parts as may be of pathological utility. After which, that the remains be dissected, or made whatever use of the anatomical teacher at such school may think proper.

"This I do as a last tribute to a science which I have delighted in, and to which I now regret that I have contributed so little; but if this example, which I have set, and designed for my professional brethren, be only followed to the extent I wish, I am satisfied that much good to science will result from it; for if medical men, instead of taking such care of their precious carcases, were to set the example of giving their own bodies for dissection, the prejudice which exists in this country against anatomical examinations, and which is increasing to such an alarming degree, would soon be done away with, and science proportionably benefited as the obstacles were thus removed. Nay, so far do I think this a duty incumbent upon every one entering the profession, that I would have it, if possible, framed into a law, that on taking an examination at a public College for license to practice, whether physic, surgery, or pharmacy, it should be made a *sine qua non*, that every one taking such license should enter into a specific agreement that his body should, after his death, become the property of his surviving brethren, under regulations instituted by authority."

He was attended during his illness by Drs. Clutterbuck, Armstrong, Davis, and Blundell; and as doctors generally disagree, they presented no exception to the general rule, in the present instance. The three first however agreed that the heart and its investing membrane were principally involved, although there was a difference of opinion respecting the nature of the affection. Dr. Blundell, singularly enough, pronounced the case *hysterical*; aware of their opinions, Mr. Ellerby directed that his brain should be presented to Dr. Clutterbuck, his heart to Dr. Armstrong, his lungs to Dr. Davis, and if a *uterus* could be found, he desired that Dr. Blundell should have it.

[1] Mr. Ellerby spoke at the public meeting regarding the Royal College of Surgeons excerpts of the report of which appeared in THE LANCET of Feb. 27th, 1904, p. 598.

# THE INTERNATIONAL SANITARY CONVENTION OF PARIS, 1903.

THE recent issue by the Local Government Board of the text of the International Sanitary Convention of Paris, 1903,[1] translated by Dr. Theodore Thomson, one of the British delegates, will enable stock to be taken of the international obligations of this country in regard to cholera and plague and of the effect of the last Convention upon the international arrangements made under the previous Conventions of 1892, 1893, 1894, and 1897. The Paris Convention was the result of a conference in the autumn of 1903 of diplomatic and technical delegates representing 23 States. In the British delegation India was separately represented. The Convention was signed by the delegates of nearly all the countries represented, Turkey being a notable exception.

At these successive conferences the general policy of Great Britain has always been to secure treatment of the subject on broad and practical lines. In the United Kingdom quarantine, with its vexatious delays and many shams, has long been abolished. Our aim is to meet risk of importation of exotic diseases by prompt action on the part of well-equipped port sanitary authorities, while securing that the proceedings of these authorities shall entail the minimum of interference with, or discomfort to, healthy persons and shall avoid all needless disturbance of trade and commerce. The system, which has been established largely on the advice of successive medical officers of the Local Government Board who have been intimately concerned in determining the national and international policy of the country on this subject, has justified itself by success. Year after year, for example, a number of cases of plague brought by shipping arrive at home ports, are detected by the vigilance of the port medical officers of health, and are dealt with almost as a matter of course by suitable measures. Little interference with trade is caused and there is seldom or never any ground for apprehension that local spread of plague will arise from these imported cases. It has never been claimed, however, that the system of port sanitary organisation affords more than a first and substantial line of defence. Our ultimate reliance is upon the internal sanitary organisation of the country, which should be such that the accidental introduction of cholera or plague can be dealt with promptly and efficiently without panic or risk of considerable spread of the disease. Liberal views of this kind were at first strongly combated abroad and were suspected to be conceived in the interests rather of commercial convenience than of public safety. But the successive international conferences from 1892 to 1897 came more and more to realise that the severely restrictive measures favoured in some parts of the continent and in the East have been without compensating advantages and are not called for in the true interests of preventive medicine. As is well known, the able advocacy of the late Sir Richard Thorne contributed in very large degree to this result.

It is satisfactory, therefore, to find that the Paris Convention shows further advances in the same direction. For example, the conference refused to take the retrograde step, strongly urged by some foreign delegates, of requiring that the condition of the port of departure, and not the health of the persons on the vessel itself, should be made the test whether a ship is or is not to be regarded as "infected" or "suspected." So also with regard to rats in relation to the spread of plague.[2] There is no question that the rat is a danger in this connexion. No one will doubt the desirability, or even the necessity, of taking measures to destroy rats on board a vessel on which cases of plague have occurred during the voyage or on which, in the absence of human plague, there is definite positive evidence of the presence of plague among the rats. But to require that any and every vessel arriving from a port at which plague is prevalent should be detained in order that its rats may be destroyed would cause an enormous interference with shipping, for the necessity of which our present knowledge affords no warrant; moreover, it cannot yet be said that we possess satisfactory means for the destruction of rats applicable under practical conditions to all parts of vessels, particularly when they are loaded with cargo. Looking to the exaggerated importance with which the destruction of rats has been regarded in many continental countries, it must be considered satisfactory that the provisions of the Convention on this point are limited to the statement that the destruction of rats on healthy ships coming from infected ports is permissible but is not in general circumstances to be compelled. Moreover, the Convention provides that methods of destroying rats may be applied either before or after the discharge of cargo; must be so carried out as not to injure cargo, engines, or walls of the ship; and in the case of "infected" or "suspected" ships must be completed within 48 hours and in the case of "healthy" ships within 24 hours. By the terms of the previous conventions (in which the question of rats had not been considered) ships, even when healthy, were liable to be refused admission to certain ports and were required to travel to other ports in the same country which are properly equipped with means of disinfection. The present Convention allows ships to be thus repulsed for the purpose of the destruction of rats to specified ports provided with means of dealing with rats. The unnecessary dislocation of traffic which this proceeding in some circumstances might entail has, however, been realised and clauses have been added recommending that healthy ships should not be repulsed from large seaports and providing that all ports liable to receive vessels from ports infected by plague or cholera must be provided with means for destroying rats, the ports available being notified by the different countries to one another. Although some of the conclusions thus arrived at with regard to the destruction of rats may be objected to by shipping interests as unduly stringent, it is certain that, taken as a whole, the unification of foreign practice in this respect which the Convention has effected more than balances these objections.

Former Conventions had defined the incubation period of plague as ten days; the Paris Convention, making use of the work of the Indian Plague Commission, has reduced the period to five days. Reduction of the period which determines whether a vessel is to be regarded as "infected" or as merely "suspected" and of the periods of observation or surveillance imposed in different circumstances has consequently been effected. Another useful addition is the recognition that the patient suffering from plague ceases to be a danger from the time when he is isolated—in previous Conventions the danger was assumed to exist until the patient had recovered or had died. A further gain is that one country is in future not authorised to adopt special measures against another in consequence of the notification of a first case of plague or cholera, even if indigenous.

In view of the difficulties which have often arisen in connexion with goods and cargoes coming from countries in which cholera or plague is prevalent, a decision of the Convention that no goods are in themselves capable of transmitting plague or cholera and that they become dangerous only when actually contaminated with the products of these diseases deserves notice. Although this appears to be an obvious truism its statement in the Convention has the important result of preventing indiscriminate disinfection by local authorities. The Convention at the same time has revised and reduced the list of "susceptible" articles which may be disinfected or refused admission to a country without requiring evidence of their contamination.

We have referred above to a few features of the Convention which will influence the practice of this country and in particular its port sanitary administration. It contains, however, numerous other administrative and technical provisions relating to cholera and plague which will be found of special interest to those concerned with preventive measures on the continent and especially in Egypt, in the Red Sea, in the Persian Gulf, and in connexion with the pilgrim traffic. The Convention demands reorganisation of the Constantinople Board of Health and specifies the steps to be taken for this purpose. As regards Egypt, it is to be regretted that the conference declined to take the opportunity of replacing the Egyptian Quarantine Board for executive purposes by one appointed solely by the Khedivial government—a proceeding which would have greatly facilitated the difficult work of prevention of disease in Egypt and the Suez Canal. Ships about to pass through the Canal have under the Convention the new facility that medical inspection is allowed to take

[1] London, Eyre and Spottiswoode, East Harding-street; Edinburgh, Oliver and Boyd; Dublin, E. Ponsonby. Price 8d.

[2] In regard to methods adopted for the destruction of rats at Marseilles see special articles on Plague Precautions at Marseilles in THE LANCET, May 24th (p. 1498) and 31st (p. 1563), 1902.

place by night as well as by day where the vessel is sufficiently lighted and now, under certain conditions, passage across Egypt of passengers and mails from infected countries is allowed. It should be added that an important merit of the present Convention is that it substitutes a single document for the several previous conventions, the combined effect of which was often confusing and contradictory.

As a whole, the Paris Convention of 1903 marks a noteworthy advance in a number of exceedingly difficult and delicate questions and the thanks of the public health service and of the country are specially due to the British delegates, medical and diplomatic, for the important and satisfactory results which they have achieved.

## BRITISH AND CONTINENTAL OPHTHALMIC SURGEONS.

WE have received the following correspondence from an ophthalmic surgeon which, as he says, indicates "the pernicious nonsense which is evidently believed and talked about by a section of English society." Letter No. 1 is from the patient and No. 2 is the ophthalmic surgeon's answer. We have, of course, suppressed all names and precise addresses.

(1)

——— road, London, W.

DEAR SIR,—For a very long time I have felt it was my duty to write to you because I am convinced that there are cures for some forms of blindness which are not understood by English specialists, and which are known to Continental oculists. In my own case I was told that nothing could be done but in Wiesbaden, at Lausanne, and at Berne I was clearly informed that the blurring of vision of which I then complained could be cured if treated in time. I have an emphatic report on my case by ———, and if you would care to see it or to see me, I will gladly come to see you. I was also under Doctors ——— and ——— who all repeated that I could have been cured if only treated in time (I am now practically blind). I am in Town, in lodgings, for some weeks only. I believe that it was in the spring of '96 that I consulted you, and, in the autumn of the same year that I also put myself in Mr. ———'s hands. His opinion then agreed with your own that nothing could be done for me. My own case is, I fear, certainly now beyond hope and I write only in the interests of others.

Yours truly,

———.

(2)

——— street, London, W., January 31st, 1905.

DEAR MADAM,—You are evidently under some misapprehension. I know two out of the three ophthalmic surgeons you name, and I am quite confident that neither of those, nor any other reputable ophthalmic surgeon on the continent, would pretend that he ever employs or knows any mode of treatment which is not within the knowledge and resources of every ophthalmic surgeon in England, and throughout the world.

So far as your letter has any reference to myself, I have to state that I have no recollection of your case, nor can I even recall your identity, but I find on referring to the memoranda I made at the time of your visits, that when I first saw you in August '95, your right eye was practically blind from extensive disease of the retina and hæmorrhages, and that it could not read the largest test type we employ. The left eye, at that time, was free from disease. On your second visit six weeks later there was a little improvement in the appearance of the right eye, and the left was still free from any signs of disease, and the sight was good, as you were able to read fluently diamond type.

I am, yours truly,

———.

# Public Health and Poor Law.

## LOCAL GOVERNMENT BOARD.

### REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Infantile Mortality in Birmingham.*—It is a strange reflection and one which should make us pause that notwithstanding all our sanitary legislation and our battalions of health officials the number of children who pass from the scene during the first few months of their sojourn upon this planet should remain practically unreduced. This fact, too, is a curious answer to the alleged social betterment of the people during recent years. If it be true, and it seems to us difficult to question it, that the lot of the lower classes has materially improved, how comes it that the discrepancy between the infantile mortality of the richer and the poorer classes remains as before? Although it is difficult to find a satisfactory answer to this question it is gratifying and hopeful to learn that in many of our large cities serious efforts are being made to face this problem, which may well be regarded in journalistic phraseology as the "question of the hour." The town council of the city of Birmingham has been evidently impressed with the gravity of the subject and its medical officer of health has at its request drawn up a special report relative thereto. During the last five years no fewer than 15,263 infants born in Birmingham have failed to keep the festival of their first anniversary and the question which suggests itself is, How many of these children could by proper means have been enabled to reach an age which would have converted them into economically productive and reproductive citizens? The answer has not yet been found in Birmingham as is shown by the two parallel columns in which Dr. John Robertson contrasts the behaviour respectively of the general and of infantile mortality. When the figures for the last 30 years are passed in review it is found that whereas the general death-rate, which in the five years 1873–77 averaged 24·8 per 1000, has progressively declined to 19·8 per 1000 in 1898–1902, the infantile mortality, which in 1873–77 was 176 per 1000 births, was in 1898–1902 185 per 1000 births, the intervening rates showing no such decline as has taken place in the general death-rate. The causes making for this terrible wastage of life are numerous but there are certain groups of diseases or symptoms which stand out prominently and which throw other groups into relative insignificance. In the first place is the group which embraces *diarrhœa and enteritis* and which during the years 1899–1903 killed no fewer than 3647 of the infants of Birmingham. Next to this group come *debility and marasmus* with 2985 deaths, then *bronchitis, pneumonia, and pleurisy* with 2119 deaths, and finally, so far as our consideration of the figures will go, *premature birth* with 1793 deaths. All the other figures, with the exception, perhaps, of those relative to what are termed *convulsions*, are far below these and it is clear that if a successful attack could be made upon these four groups a very material reduction in the whole of the infantile mortality of the city might be effected. But so far it has to be conceded that preventive medicine has not seriously concerned itself with any one member of any of these groups, a fact which indicates that if hygiene is to continue its victorious march its forces will need substantial augmentation and further differentiation. Dr. Robertson, although in no sense a visionary, is in this matter perhaps somewhat of an optimist but this is by no means to be deplored. He points out that the infantile mortality in Wiltshire and certain other rural counties is only about 95 per 1000 births, while in certain urban districts, such as Bournemouth and Handsworth, the rates are only 81 and 100 respectively. He therefore sees no reason why the infantile death-rate of Birmingham should not be reduced to below 100 per 1000 births. After showing to what a large degree the infantile mortality varies in different wards of the city Dr. Robertson observes that, generally speaking, the figures suggest that poverty and infantile mortality go hand in hand and he furnishes a diagram showing a striking association between the infantile mortality of certain wards and the proportion of houses at 3*s.* 6*d.* per week which exist therein. Turning to the several groups of diseases already referred to, Dr. Robertson lays particular stress upon the diseases connected with the digestive system which, as he points out, are responsible for about 40 per cent. of the deaths under one year of age. Such diseases he divides into two classes—those due to defective assimilation of food and those due to catarrhal conditions of the intestinal canal. As regards the first group attention is drawn to the use of unsuitable "patent" or "preserved" foods or of foods which cannot be digested, and Dr. Robertson shows that condensed milk of good brand and used in accordance with the instructions on the label is eminently deficient in fat and nitrogenous matter. The employment of separated condensed milk is also another instance of the ease with which a purchaser may under the present law be unwittingly depriving his child of sufficient nutriment. With reference to this question of artificial feeding Dr. Robertson has been able to make use of certain investigations with regard to the feeding of children under six months old in Birmingham and these are brought out in the following table:—

| | | | |
|---|---|---|---|
| Healthy babies. | Breast-fed ... ... ... | 56·0 per cent. | Out of 1200 investigations. |
| | Breast supplemented ... | 29·7 ,, | |
| | Bottle only ... ... ... | 14·4 ,, | |

During the same period the deaths of 236 infants under

six months old were investigated with the following results:—

| | | | |
|---|---|---|---|
| Babies who died from epidemic diarrhœa. | Breast-fed only ... ... ... | 10 per cent. | Out of 236 cases investigated. |
| | Breast and bottle ... ... | 10 ,, | |
| | Bottle only ... ... ... ... | 80 ,, | |

These figures may be supplemented by those of Dr. E. W. Hope with respect to Liverpool, but it is important to note that such figures relate to children under three months of age:—

| | | |
|---|---|---|
| Deaths from epidemic diarrhœa 0–3 months. | Breast fed ... ... | 20 deaths per 1000 infants. |
| | Bottle fed ... ... | 300 ,, ,, ,, ,, |

Dr. Robertson's recommendations are chiefly directed to securing greater cleanliness in the food and surroundings of young infants, that is to say, attention to badly constructed and dirty houses and more personal cleanliness among the poorer classes. Poverty, a factor which Dr. Robertson evidently sees is perhaps the *main* factor in the problem, is such a delicate question that he refers to it only in relation to the enormous influence which drink possesses in promoting and accentuating its effects. But, briefly summed up, all Dr. Robertson's recommendations centre around the better education of the children and parents in the principles and practice of hygiene. In the matter of milk supply he shows by the aid of a spot map that the milk of Birmingham is almost entirely derived within a radius of 50 miles of the city, and this being so there should, he thinks, be no delay in transit. But the cowsheds in which the cows are milked are of the usual rural type and Dr. Robertson advises the more rigid application of the special Parliamentary powers possessed by Birmingham, which enable its officers to report unsatisfactory cowsheds to the local authorities and, if they refuse to take action, to make representations to the county council and the Local Government Board. Finally, Dr. Robertson is evidently in favour of a municipal milk depôt on the lines of those of certain other large towns and he is also making inquiries concerning the desirability of establishing a day nursery for children whose mothers are at work.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9190 births and 5387 deaths were registered during the week ending Feb. 4th. The annual rate of mortality in these towns, which had been 17·5, 18·1, and 18·4 per 1000 in the three preceding weeks, declined again to 18·0 per 1000 last week. In London the death-rate was 17·5 per 1000, while it averaged 18·2 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 9·0 in King's Norton, 11·6 in Bury, 11·8 in Handsworth (Staffs), 12·0 in York, 12·1 in Walthamstow, 12·2 in Rotherham, 12·3 in Southampton, and 12·4 in Hornsey; while the highest rates were 23·6 in Wolverhampton and in Nottingham, 23·8 in Plymouth, 26·5 in Swansea, 28·1 in Norwich, 28·8 in Stockton-on-Tees, 31·3 in Middlesbrough, 31·7 in Rhondda, 31·1 in Hanley, and 33·2 in Merthyr Tydfil. The 5387 deaths in these towns last week included 368 which were referred to the principal infectious diseases, against 378, 358, and 376 in the three preceding weeks; of these 368 deaths, 114 resulted from whooping-cough, 94 from measles, 60 from diphtheria, 39 from scarlet fever, 35 from diarrhœa, 22 from "fever" (principally enteric), and four from small-pox. In Brighton, Southampton, Northampton, Walsall, Stockport, Huddersfield, and 12 other smaller towns no death from any of the principal infectious diseases was registered, while they caused the highest death-rates in Devonport, Hanley, Grimsby, Nottingham, Middlesbrough, Stockton-on-Tees, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Nottingham, Stockton-on-Tees, and Merthyr Tydfil; from scarlet fever in Hanley; from diphtheria in Bournemouth, Middlesbrough, and Swansea; from whooping-cough in Willesden, Hastings, Hanley, Grimsby, Preston, and Barrow-in-Furness; from "fever" in Middlesbrough; and from diarrhœa in West Bromwich. Of the four fatal cases of small-pox registered in these towns one belonged to Leeds, one to Hull, one to South Shields, and one to Newcastle-upon-Tyne. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 19, 18, and 15 at the end of the three preceding weeks, had further fallen to 13 at the end of last week; one new case was admitted during the week, against one, one, and none in the three preceding weeks. The number of scarlet fever patients remaining under treatment in these hospitals and in the London Fever Hospital on Saturday, Feb. 4th, was 2070, against 2192, 2174, and 2096 on the three preceding Saturdays; 229 new cases were admitted during the week, against 194, 225, and 251 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 401, 477, and 478 in the three preceding weeks, declined again last week to 444, but were 94 above the number in the corresponding period of last year. The causes of 69, or 1·3 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bolton, Cardiff, and in 40 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Bootle, Warrington, and Sunderland.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 21·6, 20·1, and 20·3 per 1000 in the three preceding weeks, declined again to 19·9 per 1000 during the week ending Feb. 4th, but was 1·9 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 14·1 in Greenock and 15·8 in Paisley to 24·1 in Dundee and 32·8 in Perth. The 668 deaths in these towns last week included 46 which were referred to whooping-cough, 19 to diarrhœa, nine to diphtheria, six to measles, four to "fever" (including two cases of typhus), and one to scarlet fever. In all, 85 deaths resulted from these principal infectious diseases last week, against 85, 72, and 79 in the three preceding weeks. These 85 deaths were equal to an annual rate of 2·5 per 1000, which was 1·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 45, 33, and 44 in the three preceding weeks, further rose last week to 46, of which 31 were registered in Glasgow, four in Edinburgh, three in Perth, two in Aberdeen, two in Paisley, and two in Greenock. The deaths from diarrhœa, which had been 16, 17, and nine in the three preceding weeks, further rose to 19 last week, and included 12 in Glasgow, three in Edinburgh, and two in Aberdeen. The fatal cases of diphtheria, which had been five, three, and nine in the three preceding weeks, were again nine last week, and included six in Glasgow and two in Edinburgh. The six deaths from measles corresponded with the number in the preceding week and included five in Glasgow. The fatal cases of "fever," which had been three and six in the two preceding weeks, declined again last week to four, of which one case of typhus was registered in Dundee and one in Aberdeen. The deaths referred to diseases of the respiratory system, which had been 183, 156, and 163 in the three preceding weeks, declined again to 146 last week but were 17 in excess of the number in the corresponding period of last year. The causes of 35, or more than 5 per cent., of the deaths registered in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·6, 21·2, and 25·5 per 1000 in the three preceding weeks, declined again to 24·2 per 1000 during the week ending Feb. 4th. During the past four weeks the death-rate has averaged 23·4 per 1000, the rates during the same period being 17·2 in London and 19·6 in Edinburgh. The 176 deaths of persons belonging to Dublin registered during the week under notice showed a decline of nine from the number in the preceding week and included nine which were referred to the principal infectious diseases, against 21, 10, and 18 in the three preceding weeks; of these five resulted from measles, two from whooping cough, one from scarlet fever, and one from diphtheria, but not any from small-pox, "fever," or diarrhœa. These nine deaths were equal to an annual rate of 1·2 per 1000, the death-rates last week from the principal infectious diseases being 1·1 in London and 1·7 in Edinburgh. The fatal cases of measles,

which had been 12, five, and 13 in the three preceding weeks, declined again last week to five. The 176 deaths in Dublin last week included 32 of children under one year of age and 55 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were slightly in excess of the respective numbers recorded in the preceding week. Five inquest cases and four deaths from violence were registered; and 69, or nearly two-fifths, of the deaths occurred in public institutions. The causes of seven, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

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### VITAL STATISTICS OF LONDON DURING 1904.

COMPLETE statistics relating to sickness and mortality during the year 1904 in each metropolitan borough and in the City of London will be found summarised in the accompanying table. The mortality figures relate to the deaths of persons actually belonging to the various boroughs, and are the result of a complete system of distribution of the deaths occurring in the public institutions of London among the boroughs in which the deceased persons had previously resided. With regard to the notified cases of infectious diseases in London during 1904, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 6·1 per 1000 of the population, estimated at 4,648,950 persons in the middle of last year. In the three preceding years the rates had been 8·9, 9·9, and 6·0 per 1000 respectively. Among the various metropolitan boroughs the rates last year ranged from 3·2 in Chelsea, 3·7 in Kensington, the City of Westminster, and Hampstead, 4·2 in Lewisham, and 4·5 in Lambeth, to 7·1 in Deptford, 7·2 in Bermondsey, 8·5 in Hackney, 9·3 in Poplar, 9·4 in Stepney, and 11·6 in Bethnal Green. The prevalence of small-pox was slightly greater than it had been in the preceding year, 491 cases being notified in 1904 against 416 in 1903. This disease was proportionally most prevalent in Stoke Newington, Finsbury, Bethnal Green, Stepney, Poplar, and Bermondsey. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals was 512, against 1788, 8455, and 414 in the three preceding years; 17 cases remained under treatment at the end of the year, against 666, 14, and four at the end at the three preceding years. Scarlet fever was slightly more prevalent in 1904 than in the preceding year, the number of cases notified being 13,438, against 18,390, 18,258, and 12,531 in the three preceding years. Among the various metropolitan boroughs this disease showed the highest proportional prevalence in St. Pancras, Hackney, Bethnal Green, Stepney, Camberwell, Deptford, and Woolwich. During last year 11,629 scarlet fever patients were admitted into the Metropolitan Asylums Hospitals, against 14,959, 15,133, and 10,808 in the three preceding years; the number of cases remaining under treatment at the end of the year was 2349, against 3080, 2327, and 1606 at the end of the three preceding years. The prevalence of diphtheria during last year showed a slight decline; 7220 new cases were notified, against 12,154, 10,735, and 7738 in the three preceding years. The greatest proportional prevalence of this disease occurred in Hammersmith, Fulham, Hackney, Bethnal Green, Stepney, and Poplar. The Metropolitan Asylums Hospitals contained 800 diphtheria patients at the end of last year, against 1369, 927, and 734 at the end of the three preceding years; the number of admissions, which had been 9090, 7988, and 6158 in the three preceding years, further declined last year to 5783. A further considerable decrease in the prevalence of enteric fever took place during the year under notice, the number of notified cases, which had been 3195, 3412, and 2339 in the three preceding years, having fallen to 1896 last year. Among the various metropolitan boroughs this disease was proportionately most prevalent in St. Pancras, Hackney, Holborn, the City of London, Stepney, and Bermondsey. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals during 1904 was 1008, against 1480, 1806, and 1247 in the three preceding years; 159 cases remained under treatment at the end of December last, against 195, 210, and 246 at the end of the three preceding years. Erysipelas showed the highest proportional prevalence in St. Marylebone, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey. The 273 cases of puerperal fever notified during the year were 40 in excess of the number in the preceding year; 24 cases belonged to Islington, 23 to Hackney, 16 to Lambeth, 15 to Stepney, 15 to Poplar, 14 to Wandsworth, and 13 to Camberwell.

During the year under notice, 74,555 deaths of persons belonging to London were registered, equal to a rate of 16·1 per 1000, against 17·1, 17·2, and 15·2 per 1000 in the three preceding years; the average rate for the ten years 1894–1903 was 17·9 per 1000. Among the various metropolitan boroughs the lowest death-rates last year were 10·2 in Hampstead, 12·0 in Lewisham, 13·3 in Stoke Newington, 13·4 in Wandsworth, 13·5 in the City of Westminster, and 13·8 in Paddington; while the highest rates were 19·3 in Bethnal Green, 19·4 in Stepney, 20·0 in Bermondsey, 20·1 in Southwark, 20·4 in Shoreditch, and 21·3 in Finsbury. In the five groups of boroughs the rates were 14·6 in the west, 15·3 in the north, 15·5 in the south, 19·3 in the east, and 19·8 in the central. To the principal infectious diseases 9906 deaths were attributed during the year; of these, 25 resulted from small-pox, 2256 from measles, 365 from scarlet fever, 723 from diphtheria, 1495 from whooping-cough, 286 from enteric fever, six from ill-defined forms of continued fever, and 4750 from diarrhœa, but not one from typhus fever. These 9906 deaths were equal to an annual rate of 2·14 per 1000; the corresponding rates in the three preceding years were 2·22, 2·21, and 1·75 per 1000 and the decennial average was 2·47 per 1000. Among the various metropolitan boroughs the death-rates from these principal infectious diseases ranged from 0·60 in the City of London, 0·66 in Hampstead, 0·87 in the City of Westminster, 1·13 in Stoke Newington, 1·41 in Lewisham, and 1·45 in Kensington, to 2·57 in Finsbury, 2·84 in Stepney, 2·95 in Bethnal Green, 3·13 in Southwark, 3·20 in Shoreditch, 3·35 in Poplar, and 3·52 in Bermondsey. The fatal cases of small-pox numbered 25, against an average of 180 in the ten preceding years; of these 25 cases seven belonged to Bethnal Green, three each to Finsbury, Stepney, and Poplar, two each to Paddington, Holborn, and Shoreditch, and one each to Kensington, Islington, and Southwark. The 2256 deaths referred to measles were 333 fewer than the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Hammersmith, Holborn, Shoreditch, Bethnal Green, Southwark, and Bermondsey. The 365 fatal cases of scarlet fever were 292 below the average number in the ten preceding years; the greatest proportional mortality from this disease occurred in Finsbury, Bethnal Green, Poplar, Bermondsey, and Woolwich. The 723 deaths from diphtheria showed a decline of 1186 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Hackney, Bethnal Green, Stepney, Poplar, and Woolwich. The 1495 fatal cases of whooping-cough were 484 fewer than the average number in the ten preceding years; the highest death-rates from this disease were recorded in Shoreditch, Poplar, Southwark, Bermondsey, Greenwich, and Woolwich. The deaths referred to different forms of "fever," which had averaged 636 in the ten preceding years, had declined to 292 last year; among the various metropolitan boroughs "fever" was proportionally most fatal in Hackney, Finsbury, Stepney, Southwark, Bermondsey, and Greenwich. The 4750 fatal cases of diarrhœa were nearly 1200 in excess of the average; this disease showed the greatest proportional mortality in Fulham, Shoreditch, Stepney, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last year from the principal infectious diseases was 13·7 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 144 per 1000 last year, against 148, 139, and 130 in the three preceding years. The rates of infant mortality in the various metropolitan boroughs ranged from 94 in St. Marylebone, 104 in the City of London, 109 in Holborn, 113 in Hampstead, 114 in Stoke Newington, 122 in Wandsworth, and 123 in Lewisham, to 154 in Poplar, 155 in Stepney, 156 in Chelsea, 157 in Bethnal Green, 172 in Bermondsey, 174 in Southwark, and 188 in Shoreditch.

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UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—The Senate of the University of Durham has decided that German may be offered as an alternative subject for Greek in the preliminary examination for the degrees of doctor in medicine and master in surgery. This alteration will come into force in September, 1906.

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1904.

*(Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1904. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cholera. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| **LONDON** | **4,648,950** | **491** | **13,433** | **7230** | **3** | **1896** | **27** | **273** | **4947** | **—** | **28,296** | **6·1** | **25** | **2756** | **365** | **723** | **1495** | **—** | **286** | **6** | **4730** | **9906** | **2·14** | **76,883** | **16·1** | **144** |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington | 146,975 | 4 | 363 | 143 | — | 48 | — | 10 | 117 | — | 685 | 4·7 | 2 | 40 | 10 | 19 | 16 | — | 10 | — | 132 | 229 | 1·56 | 2017 | 13·8 | 136 |
| Kensington | 179,236 | 3 | 267 | 187 | — | 47 | 3 | 11 | 141 | — | 659 | 3·7 | 1 | 68 | 5 | 17 | 19 | — | 6 | 1 | 139 | 256 | 1·46 | 2568 | 14·3 | 150 |
| Hammersmith | 117,412 | — | 285 | 204 | — | 39 | 1 | 12 | 123 | — | 664 | 5·7 | — | 106 | 6 | 22 | 36 | — | 5 | — | 121 | 296 | 2·53 | 1840 | 15·7 | 152 |
| Fulham | 152,482 | — | 295 | 300 | — | 39 | — | 8 | 130 | — | 772 | 5·1 | — | 64 | 4 | 23 | 58 | — | 6 | — | 224 | 379 | 2·49 | 2346 | 15·4 | 153 |
| Chelsea | 74,329 | — | 108 | 61 | — | 13 | — | 7 | 45 | — | 234 | 3·2 | — | 25 | 6 | 5 | 26 | — | 2 | — | 46 | 110 | 1·49 | 1225 | 16·6 | 156 |
| City of Westminster | 177,321 | 6 | 313 | 145 | 1 | 51 | 2 | 5 | 126 | — | 649 | 3·7 | — | 23 | 9 | 7 | 18 | — | 10 | 2 | 84 | 153 | 0·87 | 2396 | 13·5 | 125 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone | 130,337 | 8 | 295 | 118 | — | 50 | — | 3 | 187 | — | 661 | 5·1 | — | 50 | 9 | 14 | 13 | — | 3 | — | 108 | 197 | 1·51 | 2109 | 16·2 | 94 |
| Hampstead | 86,663 | 1 | 169 | 58 | — | 27 | 1 | 6 | 56 | — | 318 | 3·7 | — | 17 | 2 | 4 | 8 | — | 5 | — | 21 | 57 | 0·66 | 884 | 10·2 | 113 |
| St. Pancras | 235,936 | 7 | 848 | 349 | — | 136 | — | 10 | 258 | — | 1608 | 6·8 | — | 127 | 27 | 38 | 82 | — | 17 | — | 183 | 474 | 2·01 | 4102 | 17·4 | 150 |
| Islington | 341,044 | 18 | 1150 | 347 | 1 | 128 | — | 24 | 280 | * | 1948 | 5·7 | 1 | 181 | 35 | 29 | 84 | — | 18 | — | 248 | 596 | 1·75 | 5243 | 15·4 | 129 |
| Stoke Newington | 52,445 | 8 | 154 | 61 | — | 14 | — | 3 | 53 | — | 293 | 5·6 | — | 7 | 3 | 8 | 12 | — | 3 | — | 26 | 59 | 1·13 | 697 | 13·3 | 114 |
| Hackney | 226,296 | 13 | 858 | 571 | — | 185 | 3 | 23 | 266 | — | 1919 | 8·5 | — | 76 | 20 | 55 | 55 | — | 26 | — | 249 | 481 | 2·13 | 3366 | 14·9 | 142 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn | 57,161 | 6 | 98 | 46 | — | 41 | — | 7 | 76 | — | 274 | 4·8 | 2 | 42 | — | 4 | 9 | — | 4 | — | 41 | 102 | 1·80 | 1054 | 18·5 | 109 |
| Finsbury | 96,958 | 15 | 330 | 146 | — | 46 | — | 5 | 106 | — | 648 | 6·6 | 3 | 58 | 17 | 16 | 28 | — | 9 | — | 123 | 254 | 2·57 | 2100 | 21·3 | 140 |
| City of London | 23,482 | 2 | 32 | 40 | — | 14 | — | — | 21 | — | 109 | 4·7 | — | — | 1 | 2 | 7 | — | — | — | 4 | 14 | 0·60 | 390 | 16·7 | 104 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch | 117,033 | 14 | 343 | 188 | — | 48 | 1 | 5 | 178 | — | 777 | 6·7 | 2 | 81 | 13 | 18 | 63 | — | 8 | — | 189 | 374 | 3·20 | 2378 | 20·4 | 188 |
| Bethnal Green | 130,207 | 126 | 661 | 425 | — | 58 | 4 | 12 | 224 | — | 1510 | 11·6 | 7 | 90 | 18 | 47 | 52 | — | 6 | 1 | 162 | 383 | 2·95 | 2500 | 19·3 | 157 |
| Stepney | 303,791 | 90 | 1258 | 821 | 1 | 198 | — | 15 | 470 | — | 2853 | 9·4 | 3 | 174 | 33 | 90 | 126 | — | 30 | — | 403 | 859 | 2·84 | 5876 | 19·4 | 155 |
| Poplar | 169,905 | 42 | 547 | 670 | — | 93 | — | 15 | 204 | — | 1571 | 9·3 | 3 | 91 | 24 | 84 | 81 | — | 13 | — | 272 | 568 | 3·35 | 3149 | 18·6 | 154 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark | 207,937 | 28 | 415 | 281 | — | 92 | — | 12 | 298 | — | 1126 | 5·4 | 1 | 191 | 12 | 26 | 118 | — | 18 | 1 | 282 | 649 | 3·13 | 4169 | 20·1 | 174 |
| Bermondsey | 129,397 | 19 | 454 | 193 | — | 73 | 1 | 5 | 186 | — | 931 | 7·2 | — | 136 | 18 | 16 | 69 | — | 16 | 1 | 200 | 456 | 3·52 | 2582 | 20·0 | 172 |
| Lambeth | 310,359 | 28 | 658 | 326 | — | 100 | 4 | 16 | 248 | — | 1380 | 4·5 | — | 164 | 16 | 34 | 109 | — | 11 | — | 316 | 650 | 2·10 | 4884 | 15·8 | 138 |
| Battersea | 175,465 | 7 | 385 | 227 | — | 63 | 2 | 7 | 161 | — | 852 | 4·9 | — | 59 | 10 | 14 | 59 | — | 13 | — | 198 | 353 | 2·02 | 2541 | 14·5 | 147 |
| Wandsworth | 257,448 | 6 | 772 | 404 | — | 71 | 3 | 14 | 270 | — | 1540 | 6·0 | — | 100 | 14 | 42 | 50 | — | 11 | — | 225 | 448 | 1·73 | 3435 | 13·4 | 122 |
| Camberwell | 268,384 | 19 | 956 | 270 | — | 78 | 1 | 13 | 327 | — | 1664 | 6·2 | — | 110 | 17 | 21 | 99 | — | 16 | — | 246 | 509 | 1·90 | 3992 | 14·9 | 144 |
| Deptford | 113,509 | 11 | 405 | 196 | — | 30 | — | 10 | 151 | — | 803 | 7·1 | — | 76 | 10 | 16 | 49 | — | 3 | — | 124 | 278 | 2·46 | 1823 | 16·1 | 145 |
| Greenwich | 101,651 | 1 | 213 | 152 | — | 49 | — | 2 | 86 | — | 503 | 5·0 | — | 40 | 3 | 11 | 56 | — | 9 | — | 110 | 229 | 2·26 | 1455 | 14·4 | 142 |
| Lewisham | 140,401 | — | 337 | 130 | — | 29 | — | 8 | 83 | — | 587 | 4·2 | — | 25 | 7 | 12 | 37 | — | 2 | — | 115 | 198 | 1·41 | 1681 | 12·0 | 123 |
| Woolwich | 123,416 | 8 | 468 | 161 | — | 27 | 1 | 5 | 75 | — | 745 | 6·1 | — | 29 | 16 | 29 | 56 | — | 6 | — | 159 | 295 | 2·40 | 1763 | 14·3 | 135 |
| Port of London | — | 1 | 1 | — | — | 9 | — | — | 1 | — | 12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup.

# THE SERVICES.

## ROYAL NAVY MEDICAL SERVICE.

Inspector-General of Hospitals and Fleets Herbert Mackay Ellis, Director-General of the Medical Department of the Navy, has been appointed Honorary Physician to His Majesty in place of Inspector-General of Hospitals and Fleets Sir James John Louis Donnet, K.C.B., deceased (dated Jan. 13th, 1905).

The following appointments are notified:—Staff Surgeons: M. L. B. Rodd to the *President*, additional, for a three months' hospital course at the West London Hospital; J. C. G. Reed to the *Vulcan* on recommissioning. Surgeons: A. A. Forrester, lent for duty at New Hospital, Chatham. R. M. Richards to the *Vulcan* on recommissioning; F. R. Mann to the *Fire Queen*, for disposal; C. M. Woods to the *Sapphire II.* on commissioning; and D. H. Vickery to the *Wildfire* for disposal.

## ROYAL ARMY MEDICAL CORPS.

Major H. M. Adamson is appointed to command the Station Hospital, Shahjehanpur, vice Lieutenant-Colonel G. F. Gubbin. Captain P. S. Lelean assumes medical charge of women and children, Marlborough Lines, Aldershot.

Colonel J. M. Beamish is placed on retired pay (dated Jan. 26th, 1905). Lieutenant-Colonel C. B. Hill is placed on temporary half-pay on account of ill-health (dated Jan. 29th, 1905). The undermentioned Lieutenants to be Captains:—W. J. S. Harvey (dated Jan. 14th, 1905) and B. A. Craig (dated Jan. 29th, 1905).

Captain E. Blake Knox is appointed secretary to Surgeon-General Sir Thomas Gallwey, K.C.M.G., C.B., A.M.S., Principal Medical Officer of His Majesty's Forces in India.

## ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant P. J. O'Sullivan, 1st City of London Royal Garrison Artillery (Volunteers), to be Surgeon-Lieutenant (dated Feb. 4th, 1905).

## VOLUNTEER CORPS.

*Royal Garrison Artillery (Volunteers):* 1st Fifeshire: Surgeon-Captain H. W. Laing resigns his commission (dated Jan. 28th, 1905). 1st Essex: William Douglas Watson to be Surgeon-Lieutenant (dated Feb. 8th, 1905).

*Rifle:* 2nd Volunteer Battalion the Norfolk Regiment: Surgeon-Captain S. J. J. Kirby, from the 2nd Volunteer Battalion the Suffolk Regiment, to be Surgeon-Captain (dated Jan. 28th, 1905). 5th (The Hay Tor) Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant-Colonel W. H. Webb is granted the honorary rank of Surgeon-Colonel (dated Feb. 8th, 1905). 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant-Colonel P. E. Hill (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, South Wales Border Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated Feb. 8th, 1905). 1st Bucks: Supernumerary Surgeon-Lieutenant-Colonel W. H. Bull (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Home Counties Volunteer Infantry Brigade), is granted the honorary rank of Surgeon-Colonel (dated Feb. 8th, 1905). 1st Volunteer Battalion the Northamptonshire Regiment: George Herbert Lewis to be Surgeon-Lieutenant (dated Jan. 28th, 1905).

## ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: Major C. H. Hartt is granted the honorary rank of Lieutenant-Colonel (dated Jan. 28th, 1905); Captain (Honorary Captain in the Army) M. Taylor is granted the honorary rank of Major (dated Jan. 28th, 1905).

## OUR RECRUITING ARRANGEMENTS.

As our readers are well aware, we have frequently in the past called attention to the very inadequate arrangements that are made for the accommodation of army recruits. We are glad, therefore, to notice that the *Army and Navy Gazette*, after also repeatedly urging the importance of this matter, again returns to the subject. Our service contemporary says:—

> Mr. Arnold-Forster has expressed himself anxious to do all in his power to render the army attractive. As a beginning he might well call for reports on the situation and adaptability of recruiting centres in large towns. If he is really desirous of bettering the class of men joining the ranks he could take no step which would be more effectual in producing this end than by arranging that in future the headquarters of all recruiting districts shall be so located that no self-respecting young man will shrink from presenting himself at them for the purpose of enlistment.

A measure of this kind would be a practical reform which would meet with the approval of everyone.

## ROYAL ARMY MEDICAL CORPS EXAMINATION.

The undermentioned were successful at the recent competitive examination in London for commissions in the Royal Army Medical Corps. 68 candidates entered.

| | Marks. |
|---|---|
| Charles Pinkerton Thomson, M.D., Ch.B. Glasg. ... ... | 669 |
| George Wykeham Heron, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 560 |
| Robert John Bertram Buchanan, L.R.C.P. & S. Irel. ... ... ... ... ... | 565 |
| George Brooke Forbes Churchill, M.R.C.S. Eng., L.R.C.P. Lond. .. ... ... | 563 |
| William Steward Nealor, M.R.C.S. Eng., L.R.C.P. Lond ... ... ... ... | 555 |
| James Edward Hoar, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 539 |
| Richard Graves Meredith, L.A.H. Dub., M.B. R.U.I. | 538 |
| Frederick Emilius Roberts, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 538 |
| George Smith Wallace, M.B., Ch.B. Glasg., D.P.H. Lond. ... ... ... ... ... | 531 |
| Wilfred Parsons, M.R.C.S. Eng., L.R.C.P. Lond. ... | 517 |
| Arthur Anderson McNeight, M.B., B.Ch., B.A.O. Dub. | 514 |
| Ernest Brabazon Booth, M.D., B.Ch., B.A. Dub. ... | 513 |
| Thomas Holroyd Gibbon, M.D., B.Ch. Dub. ... ... | 512 |
| Richard James Campbell Thompson, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... | 509 |
| Ernest George Robert Lithgow, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... | 504 |
| Pierce Power, M.B., B.Ch., B.A.O. R.U.I. ... ... ... | 502 |
| Charles William O'Brien, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 496 |
| Ryder Percival Nash, L.R.C.P. & S. Edin., L.F.P. & S. Glasg. ... ... | 496 |
| James Sydney Pascoe, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 491 |
| Cecil Dacre More Holbrooke, M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 490 |
| John Maurice Bisdie Rahilly, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond. ... ... ... ... ... | 487 |
| George Grant Tabuteau, L.R.C.P. & S. Irel. ... ... | 487 |
| Richard Edmond Humphrey, L.R.C.P & S. Irel.... | 484 |
| William George Maydon, M.B., Ch.B. Aberd. ... ... | 483 |
| Garfield Ormrod, M.B., Ch.B. Edin. ... ... ... ... | 479 |

## THE WAR IN THE FAR EAST.

The *Times* of Feb. 6th, in its first leading article, gave a most interesting *résumé* of the momentous events which have taken place since the negotiations between Japan and Russia were broken off on the evening of Feb. 5th, 1904. In the 12 months that have elapsed since then there have occurred those remarkable changes in the history of the world with which all are acquainted. What the end of this war will be no one can, of course, foretell with any certainty. But we have meanwhile been living witnesses of "history in the making" on a large scale and cannot avoid perceiving that the events of the past year have made an indelible stamp upon the record of the present time. What influence will this have on the trend of events in the history of the future? There are at the moment of writing some vague rumours of peace in which, however, no one apparently believes. Public attention at present continues to be attracted rather to the internal condition of Russia and the disturbed state of Poland than to what is going on in Manchuria. Much has nevertheless been taking place there of great military importance although not of any decisive nature. The cold is extreme and how the Russians continue to supply their enormous forces in the field with food, fuel, clothing, and the stores and munitions of war through the Trans-Siberian railway remains a puzzle to military officers. Still, to their great credit, be it said, it is done.

There is but little of any special medical interest to be recorded. The returns obtained from the chief surgeon with General Oku's army are, however, of considerable importance. According to these there have only been 40 deaths from disease in his entire command (strength not given) since its landing on May 6th last. The figures show that of the 24,642 cases treated up to Dec. 1st, 18,578 recovered, 40 died, and 5609 were sent to Japan. It is believed that these figures are unequalled in the history of warfare. There were only 193 cases of typhoid fever and 342 cases of dysentery but the number of cases of beri-beri was 5070. The other cases were not serious. Of the casualties sustained by the army from May 6th to Dec. 19th 16 per cent. of the wounded died, 19 per cent. recovered on the field, and 65 per cent. were sent to Japan. 85 per cent. of the wounds were caused by rifle bullets, 8 per cent. by shells, and 7 per cent. by bayonet or sword thrusts. The largest percentage of recoveries was from wounds of the chest, while as regards other wounds the percentage of recoveries was larger from wounds

in the head and the abdomen than from injuries of other regions. This is attributed to the small calibre of modern rifles, the percentages in the other Japanese armies being, it is believed, about the same. Beri-beri has been a very prevalent and probably fatal disease among the Japanese armies but we have no estimate as to the number of deaths which it has caused during the campaign. The disease is the scourge of Oriental armies but the Japanese have of late years done much to mitigate its ravages, especially in their navy. Some very elaborate articles have appeared comparing the losses of the belligerent armies with one another during the year's war but at best the numerical results can only be approximate and untrustworthy at the present time.

Surgeon-General G. J. H. Evatt, C.B., retired list, A.M.S., has been finally adopted as Liberal candidate for the Southern Division of Hampshire at the general election.

# Correspondence.

"Audi alteram partem."

## THE CANCER PROBLEM AND CANCER RESEARCH.

*To the Editors of* THE LANCET.

SIRS,—No doubt you are aware that according to the Registrar-General every year nearly 28,000 people die from malignant disease in the British Isles alone. That appalling fact was sufficient reason for, and is still ample justification of, any feeble attempts of mine to solve the problem of cancer. If my findings be wrong that has still to be demonstrated, and unfortunately you and your medical colleagues in Great Britain have at present nothing else to offer those 28,000 annual victims! This reflection might serve to give you pause. You decided to publish my paper and for that courtesy I am grateful. In your leader some of my embryological conclusions are referred to in very scathing terms, but that cannot in the least impugn their truth. In the near future you may see cause to regret the terms of that leader and you may come to recognise that the paper contained more truth than your leader writer appreciated or suspected. If my conclusions be correct, there is no longer any vital embryological problem of cancer; if wrong, the cancer problem has almost certainly been lifted into a new region, that of physiological chemistry. I am not anxious to carry on a futile controversy with an editor in his own journal, even with editors so courteous as those of THE LANCET. But I would ask that courtesy to note or correct a few things in your leader. Before all else the following statement is open to very serious misconstruction: "The writer states that it is based on work carried out with the support of the ample funds for research at the disposal of the Carnegie trustees and the Moray Research Fund of the University of Edinburgh."

The funds for research are not ample. If you still think them to be so I would ask you to take the opinion of the secretary of the Carnegie Trust. The reference to these two funds was necessary because I happen to hold grants from them for certain research purposes and the Carnegie Trust lays down as a condition that in all published work the fact of a grant having been made shall be stated. The footnote refers to my work on various problems *during the past 16 years*. From 1890 to 1898 these researches were carried out from my own slender private means and without grants from any source. Every bit of my published work has left me poorer than when the research was commenced. The work of the past two years upon tumours has not cost the Moray Research Fund a single penny and the total charge for tumour researches on the two grants from the Carnegie Trust amounts at the moment to £26 8*s*. 5*d*. Of this sum since last October £16 has been paid in wages to a youth who, at the cost of much of my time and patience, has been made into a useful technical assistant, &c. He has, in fact, been trained, and is still under instruction, to be a skilled laboratory assistant for the University of Edinburgh. So that the real net cost of my tumour work has been £10 8*s*. 5*d*., or at the rate of £5 4*s*. 2½*d*. per annum. The amount is rather excessive owing to a loss of 50*s*., the price of a certain dog which was secured by me for the Liverpool Cancer Research, but which was sacrificed at the altar of science accidentally by an Edinburgh surgeon. Certain other published balance-sheets of cancer research occur to one but comparisons are odious.

There is no call for a new defence of my embryological conclusions in your pages. Had the writer of your leader appended his name there would have been no occasion for any further reply from me. The theory of heredity based in "unconscious memory" is not mine but that of a very distinguished physiologist, Professor Hering of Prague. Had the quotations regarding the germ cells, &c., been made from your pages of Oct. 29th, 1904, instead of from those of your issue of June 21st, 1902, a revised modern version of my conclusions would have resulted. As to the mimicry of the tumours it suffices for me that Sir James Paget and Fleischmann recognised it long ago, but it has never been held by me that a cancer or sarcoma "takes on the histological character of the tissue in which it is growing." It only tries to do so, and often enough it resembles no normal tissue whatever. If a cancer be somatic in origin, how does this happen? Schmorl's finds of bits of the trophoblast in the lungs in pregnancy no more refute the existence of the unlimited powers of growth than would the failure of an attempt to grow rose cuttings in a cinder heap prove that the rose had only limited powers of growth. His finds were made *in pregnancy and with a normal embryo or fœtus present*. The whole histories of hydatid mole and of chorio-epithelioma amply illustrate these powers, which can only on occasion be exercised in the absence of a normal embryo. As to the erosion of a bone by an aneurysm, I have heard that simile several times before. Presumably it is not suggested that the wall of the aneurysm or the blood does the erosion and possibly some enzyme of leucocytes, similar to, though perhaps not the same as, that found in malignant growths, may have some concern in the matter.

You, or your leader writer, wish to eliminate the germ-cell theory of cancer. Should you succeed there would always be a problem of cancer. Is any parasitic theory better? On p. 322 of your current issue you express the wish that my friend Dr. W. Ford Robertson and Mr. H. Wade "will succeed in establishing their thesis." I, too, would gladly share this hope but unfortunately it is impossible, for these supposed cancer parasites appear to be due to the following: (1) chromatolysis; (2) "tetrad" formation; (3) division of centrosomes; (4) degeneration of centrosomes; and (5) the so-called "Nebenkern." What the student nowadays is expected to profess about enzymes is no concern of mine; but before allowing my paper to appear in print, apart from the ordinary text-books a close study was made of the following: the latest editions of the two standard works of Verworn and Hoppe-Seyler, the literature on enzymes cited therein, some results recorded by botanists, and all the work of recent years published in the *Journal of Physiology* and in the *Boston Journal of Medical Research*, &c. My chief authorities were given, which is, it may respectfully be submitted, more than can be said for many of the statements contained in your leader. Regarding the point that "carcinoma is common to all vertebrates" and the relation between cancer and uterine gestation suggested by me in 1902, it is quite true that cancer is common to vertebrates though it is anything but common in the lower vertebrates. The investigators of the Imperial Cancer Research Fund got together ten cases from various parts of the world: I have an eleventh but it may be doubted whether two dozen have as yet been recorded in the literature. In the British Isles alone in 1902 27,872 people, zoologically members of the class mammalia, died from malignant disease. In view of these facts is it quite certain that uterine gestation has had nothing to do with its comparative frequency in man, for example?

A recent writer in your pages remarked that the way of the transgressor was hard. I have long realised how very hard and thorny it was, but it is comforting to think that your leader was written in the twentieth century and not in the fifteenth. Otherwise its effects would assuredly have been exceedingly painful for a certain person who has really very little enthusiasm for scientific research. But with all deference the points are not whether my embryological results be "very hypothetical," notwithstanding all that some very distinguished men may think of them, not whether the £10 8*s*. 5*d*. of Carnegie research money might have been devoted more profitably to some big cancer research, but whether the existence of an antithesis of enzymes be true and whether or not this be at the basis of

all the havoc wrought by cancer. Should this be correct, what scientific value, if any, would attach to the strictures in your leading article? Were the researches of Petry and of Hartog (which I meant to do myself) "wild speculation"? If a malignant tumour possess an enzyme totally different from that widely present in traces in normal tissues, is not that a fact of supreme significance and import? I ask your readers to judge my work for themselves. Its chief conclusions have been advanced in Liverpool before an audience including leading surgeons, physicians, and pathologists, and again more recently in the presence of a certain distinguished physiologist. On these occasions they were listened to with the deepest interest and they evoked no adverse and deprecatory criticism whatever, even on the Edinburgh research funds. Lastly, let it not be forgotten that at times my findings and conclusions have an awkward habit of turning out to be true.

I am, Sirs, yours faithfully,

Feb. 5th, 1905. J. BEARD.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of Jan. 14th, p. 120, under the heading "Local Irritation and Cancer," I suggested as an additional or alternative theory to cholesterine that glycogen in the same way leading to cell proliferation or alteration of type of division "may be due either to undue local deposition in the tissues or dependent on some nutritional disturbance in the liver or pancreas." Moreover, it had seemed to me, though I had not elsewhere seen it noted, that a similarity existed between this excess of glycogen in malignant growths and the excess of glycogen in fœtal tissues which obtains from a very early period up to the fifth month: when histological differentiation has largely advanced it begins to be deposited in the usual place, the liver, and its use to the economy becomes that to which it is put in the ordinary life of the animal (M. Foster).

In view of my belief, therefore, that in malignant disease the tissues have in some sense reverted to glycogenic tissue, either from over-production or non-conversion of glycogen, locally or generally, it may be of interest to point out that on Dec. 8th, 1904, I applied to Messrs. Parke, Davis, and Co. more especially to ascertain if taka-diastase had any amylolytic action on glycogen, suggesting at the same time pancreatic ferment. They replied that taka-diastase had little or no action but that the glycerine extract of pancreas had. Meanwhile as a result of experiments made by Mr. F. W. Gamble, pharmaceutical chemist, with various ferments, trypsin was found immediately and most effectually to break up glycogen. It is of interest, therefore, to me to find that Dr. J. Beard in his paper on the Cancer Problem[1] independently corroborates the view expressed in the above extract from my letter that it is the pancreas which is at fault. Though his explanation of the use of trypsin in fœtal life and presumably in malignant disease is different from mine it may interest him to learn that already on Jan. 19th, 1905, I had commenced to make trial of hypodermic injections of trypsin locally, together with the internal administration and outward application of pancreatic solution in a case of advanced recurrent cancer of the breast.

I am, Sirs, yours faithfully,

JOHN A. SHAW-MACKENZIE, M.D. Lond.

London, Feb. 6th, 1905.

## THE PUBLIC HEALTH LABORATORY OF MANCHESTER.

*To the Editors of* THE LANCET.

SIRS,—Will you kindly allow me to rectify an error which has crept in in the account which you gave in your issue of Feb. 4th of the opening of the Public Health Laboratory in Manchester? Your informant states that there is a staff of 13 assistants, five students, one secretary, &c., in the laboratory. This statement is obviously the result of some confusion; there are only three medical assistants (Dr. Sidebotham, Dr. Carver, and Dr. Sellers) engaged in reporting to sanitary authorities, in addition to which Dr. Sidebotham is also lecturer in practical bacteriology and Dr. Sellers assistant lecturer in comparative pathology. Dr. G. Fowler has recently joined the staff as senior chemical assistant and Dr. Ramsden, who is University Fellow in Sanitary Chemistry, acts occasionally as junior assistant. No student or unqualified assistant takes part in public health investigations. There is also a technical assistant (Mr. Simons). The staff, including the secretary and myself, consists, therefore, of eight persons; only six, including myself, are qualified to undertake investigations for sanitary authorities. Several other gentlemen take part in the teaching of public health or other advanced students but they are not assistants in the department. Although the matter is not one of much importance I do not think it desirable to allow what might reasonably be considered a great exaggeration to come under my notice without attempting to rectify it.

I am, Sirs, yours faithfully,

Feb. 7th, 1905. SHERIDAN DELÉPINE.

[1] THE LANCET, Feb. 4th, 1905, p. 281.

## THE PROGNOSIS OF ADOLESCENT INSANITY.

*To the Editors of* THE LANCET.

SIRS,—In an annotation in THE LANCET of Feb. 4th, p. 312, under the heading of "The Premature Dementia of Adolescents," you quote the opinion of Dr. Sérieux of Paris as to the curability of the "hebephrenic" and "katatonic" forms of "adolescent insanity" being only 1 in 10. In my opinion—and this has been formed on a careful study of the disease from statistical and clinical facts—the statement is calculated to produce a very unduly pessimistic and painful general effect on your professional readers who have to treat such cases and on readers who have relatives suffering from "adolescent insanity." The facts, I maintain, do not warrant such an unfavourable view. In 1873 I segregated and described a large group of mental cases with similar symptoms and called it "adolescent insanity." I subsequently gave an extensive series of clinical and statistical facts in support of my conclusion. The name and the description have been almost universally accepted by subsequent observers and authors, who, by the way, have seldom given me any credit for the induction. More recently German and American authors have adopted the term "dementia precox" to describe a sub-group comprised within adolescent insanity. Unfortunately no two of those authors mean the same thing by "dementia precox." Kraepelin has recently still further subdivided "dementia precox" into the divisions of "hebephrenic," "katatonic," and "paranoid." If any of your readers can form definite clinical pictures of those divisions from Kraepelin's descriptions and can then with confidence assort his patients under those groups I confess it is more than I have been able to do. I have always most strenuously contended that the term "dementia" should be reserved for incurable varieties of mental enfeeblement. This would save confusion, help to clarify our nomenclature, and, above all, would enable the general practising members of our profession to know better where they stand in using the word "dementia." I have no objection to the terms "hebephrenia" or "katatonia." I have much doubt about "paranoia," that fascinating and ever-changing rubbish heap of delusion, obsession, hallucination, and over self-appreciation into which some authors cast 50 per cent. of the insanities, and others—Kraepelin lately—restrict to about 5 per cent. of all the cases. But to attach those terms to forms of "dementia" seems to me an instance of medical classification gone to the verge of absurdity and confusion.

As to the curability of adolescent insanity, I took 1796 consecutive cases of insanity and found that 320 of these were in the developmental ages between 14 and 25 years inclusive. Of those 320 I had to deduct 90 as belonging to groups such as the epileptic and other forms. I found that the last five years, from 21 to 25, produced most of the 230 remaining cases, or about 70 per cent. of them. That is the time when the higher brain centres attain their full and final development. Especially do the highest emotional, volitional, and moral faculties then blossom and seed. To provide the infinitely delicate brain vehicle for such fruit of mental evolution must try to the utmost the potentialities of the developmental nervous process. It is then evidently that hereditary mental defects chiefly show themselves and cause psychical breakdowns, just as in the earlier years the lesser developmental neuroses, such as chorea, epilepsy, hysteria, somnambulism, asthma, and megrim, are most apt to appear. A careful study and summarising of the symptoms in the 230

cases showed that maniacal excitement, periodicity, acuteness, and strong sexual tincture were the dominant symptoms present, while a mental or neurotic heredity was universally present. This is, in fact, by far the most hereditary of all the forms of insanity. Instead of mental incurability I found, however, that one characteristic of the disease was a recovery rate of 51 per cent., a higher rate than that of the insanities taken as a whole. No doubt there is a special liability to relapses in the future lives of these patients more than is the case in mental disease generally, but I can point to hundreds of men and women who have passed through attacks of adolescent insanity, have done their work in life well, and have had no relapses. The really sad part of the disease is that 30 per cent. do not recover and do not die, but pass into that most typical of all the dementias, the "secondary" or "sequential" form, who live on for years, waterlog our asylum wards, are burdens on our ratepayers and are the despair of the asylum physician—not to speak of his discredit in the public estimation. The higher mind has died in those dements while their bodies live, eat, and need housing, clothing, and supervision at a cost to the working citizen of from £25 to £40 a year each. The typical asylum dement has commonly begun as an adolescent maniac.

The latest work in our department of medicine strikes a note of greater hope for the adolescent insane. The application of exact bacteriological, toxæmic, and hæmatological methods in the study of such cases by Dr. Lewis C. Bruce seems to point to a far surer basis for our future classification of mental diseases than groups of symptoms or physiological crises of life. He seems to have isolated a "hebephrenia" and "katatonia" by careful study of blood conditions, which point to toxins as its cause and to antitoxins as its remedy in the very early stages, those being detectable before the actual mental attacks. The man who will teach us how to prevent the occurrence of secondary dementia following on adolescent insanity will indeed lay humanity under a deep debt of obligation.—I am, Sirs, yours faithfully,

T. S. CLOUSTON.

Royal Edinburgh Asylum, Feb. 4th, 1905.

## URANIUM SALTS IN CANCER.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of Feb. 14th, 1903, p. 476, and of April 18th, 1903, p. 1126, you kindly gave me space to suggest the possible use of uranium salts in cancer. The following brief account of a case to some extent bears out that hope which I then expressed. The patient, now aged 68 years, had her right breast removed for cancer in July, 1902, at the Royal Infirmary, Liverpool. Secondary nodules began to show in December, 1903. Further surgery was deemed of no use and the patient was put on large doses of cinnamon. The case first came under my care in May, 1904. Locally there were countless nodules in the skin, varying in size from a pea to a marble, mostly in the axillary region but extending forwards to the sternum and backwards to the spine on the right side of the chest. Generally there were marked cachexia and decided dilatation of the heart. The patient seemed to have not long to live. After eight months' treatment with salicylate of uranium the condition is as follows. Generally the health of the patient has much improved, the murmurs over the cardiac area have gone, she eats and sleeps well, and for some months she has been able to do regular work as a seamstress. Locally dozens of the nodules have subsided and have become level with the skin, and though at intervals a fresh nodule does come the total area involved is much less than before treatment began.

It might be urged that this is a case where the growth spontaneously tends to disappear but there was no evidence of this before the drug was tried and if the patient omits it for a few days she does not feel so well. The first change in a nodule is that it swells and becomes tender and then gradually dies down. The dose of salicylate of uranium for the first few days was five grains, then for six months 15 grains, and for the last two months 20 grains daily. The patient could, no doubt, take bigger doses but there would be little gained since the complaint seems to be under fair control. Salicylate of uranium was made at my suggestion by Messrs. Burroughs, Wellcome, and Co. This firm now make five-grain tabloids and the cost per 100 is about 5*s*.

Finally, one may add that salicylate seems to be better tolerated than either nitrate or acetate of uranium.

I am, Sirs, yours faithfully,

Formby, Feb. 5th, 1905. ARTHUR C. WILSON.

## THE RECENT DISCUSSION ON CHLOROFORM ANÆSTHESIA.

*To the Editors of* THE LANCET.

SIRS,—The recent discussion on chloroform anæsthesia at the Royal Medical and Chirurgical Society is of great interest in more ways than one. It is, for example, significant that those having the greatest experience in the administration of the drug consider that danger lies in respiratory failure; but it is on the question of dosage that I desire the privilege of writing a few words. From the printed report it would certainly seem that, contrary to what might have been expected in a discussion held at a society which was not composed of specialists, the view taken of this aspect might have been a wider one. Dosage is after all only a means, and usually a rough means, to an end. When a drug is administered (for other than a purely local effect) a remote result is desired, and in order that this may ensue the drug has to be absorbed into the blood circulation and then to reach the tissues through the lymph circulation. If such a drug is given, as is usually the case, by the mouth, it may or may not be partly or wholly absorbed into the circulations. The result is quite indefinite and the physician is entirely in the dark as to the amount which still lies in the alimentary canal, that which is circulating, that which is fixed in the tissues, and that which has already been excreted into the alveoli or ducts of one of the eliminating organs. Even could the amount of the drug which is fixed in the tissues be determined there is still the complicating uncertainty of idiosyncrasy which may or may not be dependent on such physiologico-chemical union, and in spite of what Sir Victor Horsley has said there can be no doubt that chloroform is in this respect no exception to all other drugs. In a word, although it is necessary that the physician should have some rough guide in administering a drug, this being ordinarily furnished by the giving of a definite "dose," he will yet be influenced as to its further administration entirely by the effects hitherto produced and no accuracy of dosage will prevent poisoning if the dose be too large or the subject unduly susceptible. Accuracy of dosage does not in any way absolve the physician from a close observation of the effects which his drug is producing. To these somewhat obvious general principles chloroform is no exception, although there are differences in detail due to the unusual physical character of the drug and to the unusual channel of absorption and elimination. When the vapour of chloroform is inhaled it reaches the bronchioles, carried by the tidal air, and, with a fixed percentage of chloroform vapour, the amount of chloroform which reaches the bronchioles will vary with the depth of inspiration. From there it diffuses into the infundibula and alveoli and some of it is absorbed, the amount which reaches and that which passes through the alveolar membrane into the blood varying with the amount present in the bronchioles—that is, with the depth of inspiration. Any machine, then, which delivers a fixed percentage may be passing to the patient a very variable amount of chloroform, as has been pointed out by Dr. J. F. W. Silk. It affords no basis for accurate dosage and the amount of chloroform which it offers for absorption into the blood varies from moment to moment. This element of uncertainty, too, is further increased by the fact that when the partial pressures in blood and alveolar air are favourable chloroform is excreted by, instead of being absorbed by, the air passages, a fact made use of in the practice of artificial respiration for chloroform poisoning. Elimination is far more rapid than is the case with most drugs. It is evident, then, that if there is a large element of uncertainty as to the amount of a drug given in the usual way by the mouth which is at any moment circulating in the body fluids or fixed in the tissues, there is a far greater uncertainty as to the amount of chloroform present in these situations; and if it be essential that the physician should be guided entirely by the effects produced in administering a drug by the mouth, it is still more important that he should realise that he must be guided solely by the same principles in administering chloroform by the air passages. By far the greater part of

the chloroform which evaporates from any inhaler, whether a percentage one or not, is no more in the patient, within his respiratory endothelium that is, than if it were still in its bottle on the dispensary shelf, and if the use of an inhaler gives to the anæsthetist a false sense of security and tempts him to any relaxation of vigilance, a real danger among the less experienced, it will do an immense amount of harm. Passing in review all the uncertainties which must surround the administration of chloroform through a percentage inhaler, one is prepared for the statement made during the discussion that these instruments give no immunity from an overdose, but that such has actually occurred, and that in the hands of an experienced anæsthetist, artificial respiration having to be resorted to in order to save the patient's life. These regulators, then, are not safe. The use of one does not, any more than does the use of a hypodermic syringe in the case of morphia, introduce the element of safety into the administration of chloroform, and the administrator in determining whether or no more of the drug is required has to be guided by the effect produced as entirely as is the case when he administers any other drug by any other route. It has been shown that these regulators do not introduce into chloroform anæsthesia the element of safety. It is evident that it is as easy to kill a man with one of them as it is without. This being so, their sole possible advantage is lost, while by their use there is introduced the enormous disadvantage that the attention of the anæsthetist is divided between the patient and the apparatus. There is a real danger here that the general use of such apparatus will increase the death-rate, for there can be no question that chloroform cannot be given safely unless the whole attention of the administrator is concentrated on the patient and in particular upon the respiration. It is possible that it is not altogether easy for some specialists in anæsthetics to realise this, for by long practice the noting of the various points which make up normal anæsthesia becomes sub-conscious and automatic, while at the same time any variation from the normal thrusts itself immediately upon their attention. But in the case of the less experienced—those, that is, in whose practice deaths from chloroform poisoning are most likely to occur unless the whole attention is concentrated on the patient—the first signs of danger may easily be missed and the patient be beyond recovery before it is realised that he is in danger. It is admissible to repeat that chloroform cannot be given with safety, at least by any but the most experienced, unless the whole conscious attention of the administrator is concentrated on the patient and especially on his respiration, and the use of a machine, which divides his attention introduces at once into the administration the danger of fatal poisoning.

I am, Sirs, yours faithfully,

CLAYTON LANE, M.D. Lond.,
Captain, I.M.S.

Calcutta, Jan. 18th, 1905.

## FRACTURED HUMERUS IN AN ARM AFFECTED BY INFANTILE PARALYSIS.

*To the Editors of* THE LANCET.

SIRS,—I have met with a case recently which is quite new to my experience nor can I find any local *confrère* who has ever met with a similar case—viz., a young lady, aged 21 years, who has one arm quite paralysed—all the muscles have been wasted since early childhood—recently fell and fractured the humerus of the paralysed arm. What are the chances of good osseous union? The fractured arm is thoroughly fixed with four narrow Cline's splints and there is no movement of the arm, which has also a retaining bandage over the injured member across the thorax, permitting the sound arm, of course, freedom. She is taking hypophosphites and generous diet of fish, wholemeal bread, &c. Her constitution seems fairly good generally. Is there any work treating of such a case? Your valued opinion as to the probable ultimate result would be much appreciated.

I am, Sirs, yours faithfully,

RAPIER.

*** As a rule mere paralysis of the muscles of a limb does not hinder in any way the firm and speedy union of a fractured bone. In the case mentioned by our correspondent, however, there is not only paralysis of the muscles of the limb but also more or less atrophy of the bones, so that there may be little compact bone in the shaft of the humerus. In such a case some delay in union may occur but ultimately the fragments should unite firmly. In the treatment of such a fracture it is well to remember that the tissues of the paralysed limb are not of a very high degree of vitality and therefore especial care should be taken to prevent pressure sores from the splints.—ED. L.

## NITROUS OXIDE GAS, CHLOROFORM, AND AIR INTIMATELY MIXED.

*To the Editors of* THE LANCET.

SIRS,—Since you kindly inserted a short communication[1] from me on the merits of nitrous oxide gas, chloroform, and air intimately mixed either for short operations or as an introduction to prolonged insensibility by chloroform, I have had so many letters from different and far-away correspondents asking for a description of the apparatus that I have shown my own adaptation of the ordinary gas apparatus to Messrs. Down of St. Thomas's-street, who are now able to supply the necessary parts. My former communication was rather to draw attention to the principle as I thought almost anyone could adapt the Woulfe's bottle. I may add two things: I commence to use the Woulfe's bottle as soon as I turn on the gas, and I find some 50 per cent. of the patients give a slight moan after a few seconds' inhalation though as yet on inquiry after recovery I have not found one patient cognisant of it.

I am, Sirs, yours faithfully,

TOM BIRD,
Consulting Anæsthetist, Guy's Hospital.

Feb. 2nd, 1905.

## THE SERUM THERAPEUTICS OF CASES OF SNAKE-BITE.

*To the Editors of* THE LANCET.

SIRS,—Captain G. Lamb, I.M.S., in his interesting paper in THE LANCET of Nov. 5th, 1904, p. 1273, on the above subject refers once more to the experiments (published in my lecture in your columns on Feb. 6th, 1904, p. 349) in which I obtained complete recoveries of animals from eight and more lethal doses of the venoms of the cobra, king cobra, enhydrina, and bungarus cœruleus respectively previously mixed with relatively large doses of Calmette's antivenin and he repeats his criticisms of these results on the ground that as Calmette's serum is made from a mixture of venoms it is by no means suitable for the settlement of the specificity of the venoms. As, however, I have recently been informed by M. Calmette that the antivenin he supplied me for the experiments referred to was made purely by the use of cobra venom Captain Lamb's criticism falls to the ground, while he has himself pointed out that those who have failed to neutralise any of these venoms have used smaller doses of antivenin in proportion to the strength of the venoms tested than I did, so that their results agree with mine, for with the smaller doses of serum used by me the animals also died.

My excuse for returning to the subject is that my results have a practical as well as a theoretical value, for although by itself the strongest antivenins have to be used in practically impossible doses, even against cobra venom, if a full dose of the poison has been received, although it may save life if only a slightly supra-minimal lethal dose is injected (as in a case reported in the December number of the *Indian Medical Gazette*), yet if most of the venom is destroyed locally by the use of permanganate of potash, as recently re-advocated by Sir Lauder Brunton, Sir Joseph Fayrer, and myself (five successful cases of which treatment will shortly be published in India), then even a comparatively small amount of antivenin may suffice to reduce the amount of any of the colubrine venoms mentioned, which may have already entered the circulation before the local treatment is completed, to below a fatal dose and so save life. The cobra antivenin should therefore be used, if available, in every case which may possibly be due to a colubrine snake but it should be always injected intravenously, as both

[1] THE LANCET, Nov. 8th, 1902, p. 1257.

C. J. Martin and myself have shown that it acts many times as efficiently by this mode of use than when injected subcutaneously.—I am, Sirs, yours faithfully,

Calcutta, Jan. 18th, 1905. LEONARD ROGERS, I.M.S.

## MULTIPLE GESTATION.

*To the Editors of* THE LANCET.

SIRS,—In your notice of Dr. Pinard's work on the phenomenon of multiple gestation you cite many remarkable cases of extreme fertility amongst women, and draw attention to the probability of this being an inherited character. In support of this view the case of three sisters[1] in America who had between them 111 children deserves notice. The eldest, Dr. Mary Austin, who was well known for her work during the War of Independence, gave birth to triplets six times and to twins 13 times, making 44 in all. The second sister had 41 children and the third 26. A point of interest in this case is that it is hardly in accord with the supposition that extreme fecundity may be due to the influence of the father, otherwise the long arm of coincidence would have to be unduly stretched. Those of your readers who are interested in this question will find an able discussion of this and similar phenomena in the monograph by Dr. M. von Lenhossek, "Das Problem der geschlechts-bestimmenden Ursachen."

I am, Sirs, yours faithfully,

Windsor, Feb. 2nd, 1905. M. DAVENPORT HILL.

## INDIAN UNIVERSITY DEGREES AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

*To the Editors of* THE LANCET.

SIRS,—In relation to the degree of the University of Bombay I think it may be interesting to some to know that the F.R.C.S. and M.R.C.S. and L.R.C.S. are recognised in the Dental Act as degrees. "*Licentiate*" in the Spanish universities is a very old degree and in our old universities Oxford and Cambridge "Licentiate" was a grade higher than M.B.

I am, Sirs, yours faithfully,

J. G. PARSONS, F.R.C.S. Eng.

Cotham, Bristol, Feb. 4th, 1905.

*** In Table G. to be found in the Medical Register under the heading "Qualifications Now or Formerly Obtainable," "Licentiate in Medicine" is mentioned as a supplementary qualification to be obtained from the Universities of Oxford, Cambridge, and Durham. As we were unacquainted with this "degree" we communicated with the Registrar of the University of Oxford who informs us that he had never heard of the degree "Licentiate in Medicine." In mediæval times the "Bachelor of Medicine" was conferred at the same time as the "Inceptio ad lecturam" and the "M.D." with the "Inceptio ad licentiam." This latter, we presume, is what Mr. Parsons is referring to in his letter. In 1854 we learn from "The British Medical Directory" that the University of Cambridge conferred a licence *ad practicandum in Medicinâ* which was granted to candidates being previously Bachelors of Physic who could produce certificates of having attended hospital practice for three years and of having attended lectures in medicine, surgery, midwifery, and the collateral subjects. Nothing is said, however, in the same directory about a similar degree at the University of Oxford.—ED. L.

[1] Cited by L. A. Geissler in his work "Zur Kenntniss der Geschlechtsverhältnisse bei Mehrlingsgeburten," published in the Allgemeines Statisches Archiv, 1896, Band iv., S. 537 and 544.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Guye, professor of otology in the University of Amsterdam.—Dr. Karl Klein, professor of surgery in the University of Moscow.

## THE HIGH DEATH-RATE OF THE COLOURED PEOPLE IN THE UNITED STATES OF AMERICA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

IN America the difficulty of housing the poor is complicated with the negro problem. The latter is a most formidable problem which by some is thought to threaten the very existence of the country. The negroes multiply so rapidly that at least in some parts of the United States they threaten to overwhelm the white population. But to deal with this matter needs special and close study and journeys further south than could be attempted in the limited time at my disposal. It was at Washington and at St. Louis that I came in nearest touch with the negro question and then mainly as an integral part of the housing problem. The population of the District of Columbia, including the capital of Washington, is set down at 295,198 and out of this total 90,353 are negroes. Now the average annual death-rate for the years from 1894 to 1903 was 20·91 per 1000. Few, however, look at the death-rate in this light nor are the official figures given in this simple manner. The average total certainly is set forth but it is always accompanied with other tables giving the death-rate for the white and the coloured races separately. Thus for the ten years in question the average annual death-rate for the white races only amounted to 17·01 per 1000. On the other hand, the death-rate for the coloured people was no less than 29·44 per 1000. A similar difference between the white and the coloured population is recorded in many places. As already mentioned, the death-rate of the coloured population at St. Louis was 30·86 per 1000, while that of the white population was only 16·83 per 1000.[1] The startling discrepancy between these figures has led to a widespread impression that it was a question of race. But a closer examination indicates that the causes are poverty and bad sanitation rather than colour. Indeed, there are some reasons why the negroes should live longer than the white men. They are in any case less addicted to drink and they are less violent and not so likely to die from some accident. Thus, for instance, taking the deaths in the District of Columbia for the year 1903, it will be found that 19 deaths of the white and only four deaths of the coloured population are registered as due to alcoholism, giving a death-rate per 1000 of 0·092 whites and 0·044 coloured, or a ratio of 1 to 0·48. Again, in regard to cirrhosis of the liver the death-rate among the white population was 0·166 and among the coloured 0·089 per 1000, or a ratio of 1 to 0·53. For accidents the death-rate is 0·679 among the whites and 0·597 among the coloured, and for suicides the difference is 0·249 to 0·089, or a ratio of 1 to 0·36 to the advantage of the coloured people. These figures show that the latter are more sober and less violent than the white men. On the other hand, the death-rate from hereditary syphilis was only 0·015 per 1000 among the white and amounted to 0·100 among the coloured people. Yet this may be due not so much to greater immorality but rather to ignorance and poverty which prevented the parents obtaining proper treatment in the early stages of the disease. It is in respect to the more general causes of death that the coloured people especially suffer. Thus the death-rate per 1000 in 1903 was for diarrhœa and enteritis of children under two years, 0·556 among the whites and 1·859 among the coloured; for pneumonia at all ages, 0·917 and 2·690 respectively; and for tuberculosis of the lungs, 1·733 and 4·660 respectively. The report of the health officer of the District of Columbia dealing with the figures for the year 1902 summarises the situation as follows:—

The excessive mortality of the coloured race begins with earliest infancy; the ratio between the death-rates for white and for coloured from premature births is as 1 to 2·26. The corresponding ratio from congenital debility is as 1 to 2·51, from malnutrition and marasmus as 1 to 2·24, and from rickets as 1 to 29. Child-bearing is fraught, too, with peculiar dangers to coloured women. The ratio between the death-rates for white and for coloured from puerperal eclampsia is as

[1] See "Sanitation at St. Louis" in THE LANCET of Dec. 17th, 1904, p. 1753.

1 to 3·13, from puerperal peritonitis as 1 to 1·46, and from puerperal septicæmia as 1 to 4·20. Disorders of the bowels among white children under two years of age caused a death-rate which compared with the corresponding death-rate among coloured children as 1 to 3·40. The relative incidence of fatal cases of convulsions of children on the white and coloured races is as 1 to 4·64. The relative incidence of hereditary syphilis is as 1 to 3·14.

These statistics undoubtedly indicate a great difference but similar contrasts could be found in other towns where there is no racial difference among the inhabitants. I discussed the matter with Dr. J. W. Cabaniss, who is himself a coloured general practitioner, and he maintained that in those tenement houses in the South of Washington which are overcrowded with poor people belonging to the white races the death-rate is as high as that of the coloured population. In Washington from 60 to 70 per cent. of the coloured people are unskilled and underpaid labourers, whereas among the white people not more than 12 per cent. are poor and badly paid. One of the causes of the high death-rate of the coloured population is that they are not allowed to join the white men's trade unions. Therefore coloured men have little or no opportunity of becoming skilled workers. Then, whether skilled or not, being excluded from the trade organisations they often do work equal to the white man's work but for less pay. The strong prejudice felt against coloured people is utilised as an excuse for paying less even when the best work is done. The government itself has a share in this injustice, for when a coloured man works for the authorities he is not as well paid as the white man though he performs the same task. Thus those coloured people who by their ability and industry are capable of raising the standard of living cannot do so to the same extent as the white men because they are not allowed to receive equal pay even when the work they do is equally good.

The coloured man, therefore, and whatever may be the nature of the work on which he is engaged, earns much less than the white man and yet his family will number nine or ten children while the white man will only have three or four. In such circumstances poverty, overcrowding, and a high death-rate are but the natural consequences. Inquiring what the poorer coloured folks ate I was told that at Washington they often had a little bacon for breakfast which they were able to buy for from 6*d*. to 9*d*. a pound or fish at 7*d*. a pound. Then many poor people waited to a late hour to buy remnants from the butchers just as the latter were about to close their shops. These pieces of meat had often been on ice for several days and were liable to produce ptomaine poisoning. Such cases were frequent among that section of the population. In a tenement of three rooms it was quite a common thing to find a family of eight children and perhaps a boarder as well. Dr. Cabaniss had on the night previous to my visit attended a woman in her confinement. There were four of her children living with her at the time in the one room that she possessed. The children were sick the next morning. It also often happens that the patients cannot afford to purchase the drugs prescribed for them. In that case they may appeal to some charitable institution but even if the help is granted considerable time is lost in securing such assistance and the patient suffers in consequence. Others depend when they are ill on sick allowances from benefit or aid societies to which they subscribe; but here, again, some time must elapse before the money is obtained and they are in such extreme poverty that they do not buy the medicine till they have received the sick benefits to which they are entitled. Then there is the pride of the poor which often impedes the efforts of those who desire to help. It appears that among the coloured poor there is a most remarkable amount of pride of this description and therefore much distress remains unknown and unrelieved. These are all causes that contribute to the high death-rate. At Washington the average wage paid to the unskilled coloured worker is 4*s*. a day. Some get a little more or a little less but a dollar is the average. Considering the cost of living this, for America, is a low wage and, of course, is irregular, for often no work at all is to be had.

At Washington perhaps 30 per cent. of the coloured people belong to the better class. Those who have succeeded in raising themselves from the condition of mere labourers seem to do as well as the white man, whether it be as skilled workers, as teachers, or as men of science. In Washington there are a greater number of fully qualified medical practitioners of African descent than there are medical men descended from the European races. Once the negro has acquired superior education he engages in every branch of human activity just as if he were a white man. In regard to medical practice, the coloured practitioner has naturally more practice among the coloured people and this, of course, is the poorest practice. Yet it is not so disadvantageous as it may appear at first sight. The fact is that the poor, while they can only afford to pay very small fees, nevertheless do earnestly endeavour to pay those fees. On the other hand, though the better class of patients pay more when they do pay, it often happens that they do not pay at all. What renders practice among the poorer coloured people especially hard is the fact that they cannot so readily obtain help from the public charities. Cases of cancer are not willingly admitted to the hospitals and cases of pulmonary tuberculosis are absolutely refused. This is a very serious matter indeed for the coloured people, because in their poverty and their overcrowded tenements they have no means of nursing such cases and the close contact with them is more likely to spread the disease. On the other hand, the upper class of the coloured people appreciate sanitary measures, good drainage, and cleanliness quite as keenly as the white population. At least, assurances to that effect were given to me, though I was not long enough in the country to verify these assertions. But even if it were not so there would be nothing surprising or discouraging in such shortcomings. What is surprising is the fact that it is possible already to speak of an upper class among the coloured people. 25 years ago no such class existed. The negro, but recently a slave, was in almost every case an unskilled worker. Now some of them have succeeded in entering even the universities and in competing with the white races as members of the liberal professions. If there is, nevertheless, a much higher death-rate among the coloured population this, I must repeat, is due to economic causes and not to racial inferiority. Not only is this assertion made by coloured medical practitioners but it is admitted by the local authorities themselves. The report of the health officer of the District of Columbia, after giving the comparative vital statistics quoted above, remarks that the suggestion has often been made that the high death-rate of this district is due to the presence of a large coloured population. The report states, however, that—

> The Health Department finds no sufficient basis for the belief that the presence of a large number of people in the District of Columbia who are of African descent is of itself a sufficient cause for a high death-rate. The coloured population of this district represents to a large extent those engaged in severe manual labour, often under conditions involving undue exertion and great exposure to inclement weather. It represents, too, that portion of the community most ignorant of the laws of hygiene and least able by reason of poverty and ignorance to live in accordance with such laws. This is true not only of the present generation but of its ancestors. It is believed that the high death-rate among our coloured people, while possibly due in part to the comparatively recent transplantation of the race to this country, is due largely to defects of constitution produced by long-continued insanitary living and by attacks on such susceptible constitutions by insanitary living at the present time. There is a certain portion of every community subject to the operations of these same causes. The poor and ignorant labouring class in the District of Columbia happens to be more or less distinctly marked out afong race lines and its death-rate is therefore separately determined.
>
> The poor and ignorant labouring class elsewhere is usually not of a peculiar race and the mortality in it is not definitely known. Until comparisons have been made between these similar classes of different communities, determined by other than race lines, it seems hardly proper to charge our Afro-Americans as such with the responsibility for an undue mortality. It is unwise, too, to conclude that the death-rate of the District of Columbia is relatively high solely because of the presence of a large number of coloured people in the community. On the other hand, the best interests of the community demand that the most active measures possible be adopted to remove such conditions as are responsible for any undue mortality existing among our poor people as a class, whether white or coloured; such conditions, for instance, as improper housing, lack of facilities for personal cleanliness, and general ignorance of sanitary laws.

The above statement, while confirming the evidence which I was able to obtain from the coloured people themselves, seems so impartial and judicious that I have quoted it at length. The presence of the coloured races really serves to illustrate the great difference of vitality between the extreme poor and the generality of the population. As further illustrating this difference I could not but notice the similarity between the spot maps of Washington published in the same report and many spot maps of the cholera epidemics in various European towns during the years 1892 to 1894. In both cases the incidence of disease corresponded to a large extent with the economic condition of the inhabitants. The negro problem is therefore the problem of the unskilled worker—of the submerged tenth, as we should say in England. In the south, however, in the old slave States, the

position, I am told, is quite different. There it is not, I understand, a question of insufficient wages but of the absolute determination of the negro to live outside the wages system altogether. He seeks to cultivate a little plot of land for himself, to live entirely on his land, and will not work for anyone else, however high the wages may be. Certainly if the negro can live on the soil, if he can afford to keep large towns, factories, mills, and workshops at a distance, and is not attracted to them by the hope of pleasure, dissipation, and gain he may develop an agricultural race of people whose physique will excel that of the town-living white man.

## MEDICAL NOTES FROM THE FAR EAST.

(FROM A SPECIAL CORRESPONDENT.)

*(Concluded from p. 258.)*

THE scenery around Matsuyama is as picturesque as could be wished and the great Daimyo's castle for which it is noted standing out from the trees on the top of the topmost hill, with a magnificent view over 100 miles of land and sea, has been taken over for the housing of the captive Russian officers. At the time of my visit—namely, in August, 1904—there were about 2000 prisoners in Matsuyama, and of these there were then 270 in hospital, almost all suffering from wounds; altogether 670 wounded had been admitted. It speaks well for the Japanese medical men that only seven of these have died (all from the effects of gunshot wounds) and that there has been no death from sickness. Surgeon-General Kikuzi, who was formerly an assistant to Professor Bruns of Tübingen, is in charge of the whole hospital and himself performs all the operations. Two Russian medical men assist in the work of the hospital, one of them, who holds the rank of colonel, taking charge of the medical wards. The Japanese Government has built the hospital and equipped it on generous lines, the complete medical and nursing staff for the 270 patients under treatment consisting of 11 Japanese medical men and the two Russians already mentioned, with 10 male and 66 female nurses, apart from the clerical and menial establishment. The hospital is at some distance from, and out of sight of, the main prisoners' quarters, being situated in rich open country at the end of a village on the outskirts of Matsuyama. The compound is inclosed by a simple wire fence of four strands guarded at the entrance and no doubt elsewhere by a sentry in khaki, but there cannot be much danger of escape. No Russian could be mistaken for a Japanese and in this land of secret information and detectives no European could pass more than a few days without the circumstances becoming known to the authorities. No person of any nationality could well leave the island of Shikoku or, outside of Shikoku, leave Japan without supplying particulars of name, age, parentage, profession, home residence, business, and object of journey to several police officers in turn. At Matsuyama the captured Russians are in safe keeping without obvious imprisonment.

Surgeon-General Kikuzi—"Médecin Inspecteur," as he has had printed on the European side of his visiting card—is one of three surgeons-general in Japan who, with three in Manchuria, make up the list of general officers under Baron Koike, the Director-General in Tokio. The others who, with Surgeon-General Kikuzi, make up the three in Japan are Surgeon-General Hashimoto at the Red Cross Hospital in Tokio and Surgeon-General Sato in Hiroshima.

The hospital is built, like others, of unstained imbricated wooden boards, has thatched roofs, and is designed on the pavilion principle, the pavilions being connected by a covered central corridor. At one end of it sites are staked out and foundations are being laid for four or six new pavilions, for, as my host remarked with a quiet smile, "we are expecting more guests before long." The infectious ward was away by itself beyond the site of the proposed new pavilions but it was empty. No case of sickness had died, there had been no case of epidemic disease, and there was at the time no case of medical interest in the wards. The latrine system was on the same unreasonable principle as at Sasebo and Hiroshima and need not be again condemned in detail. On the other hand, the Japanese military medical service has an excellent regulation by which the rank and file are given two lectures every month in companies by the medical officers on the principles of health, first aid, and the application of the first field dressing. A corresponding regulation might well be introduced into our army and in order to insure the intelligent execution of sanitary measures it should be laid down as essential that every officer in the army, whether combatant or non-combatant, should have a good knowledge of the same subjects on broader lines. To this regulation the Japanese soldier is now showing absolute submission with the very best results. Similarly in Japanese civil life there is a regulation by which every child in the schools is assigned to the care of a particular medical man whose duty it is to examine and to report on the child's health and physique every year and to give instruction on health matters once a month. In Japan both the Government and the public are making a serious, and in their belief a successful, effort to improve the national physique. In some of the Japanese prefectures (corresponding in size to our counties) there is already a well-organised prefectoral health department. At Nagasaki, for instance, this department consists of 16 medical officers of health who are paid from £70 to £200 a year by the prefectoral government without fixity of tenure and are sent to various districts as may be required.

A good instance of scientific observation in medical subjects being visibly turned to account is the Japanese record of frost-bite during the war with China in the winter of 1893–94. The temperature in Manchuria goes down to −20° F.—i.e., over 50° of frost—and frost-bite during the winter months became seriously common among the Japanese troops. Surgeon-General Kikuzi, however, at that time principal medical officer of one of the armies, observed that frost-bite seldom occurred even at the lowest temperatures so long as the men kept their boots on and remained dry. In driving snow with uncovered hands and ears, or if these extremities were covered only with absorbent woollen materials which became soaked with moisture, frost-bite was of more frequent occurrence and in exposure after crossing a river, as in the battle of the Yalu fought against the Chinese, it was most common of all. The prophylaxis against frost-bite is evidently therefore to instruct the troops to keep themselves as dry as possible and use will be made of this knowledge in the campaign during the winter. Incidentally this affords an example of a subject in which the medical officer must be consulted by any general who understands the importance of health to the efficiency of troops.

At Matsuyama there was a collection of bullets and splinters, the third that I had seen, and one that would well repay examination. The Sasebo collection was essentially one of shell fragments, the Hiroshima collection was one of Russian bullets, and this at Matsuyama was one of specimens of the slender Japanese bullet. As a rule the jagged irregular distortion produced by ricochet off rock or stone could be distinguished from the slighter degrees of distortion due to concomitant fracture of a hard bone, and in general an impression was formed that the more slender the bullet the more common is distortion in bulk but the less common is fragmentation. The most remarkable specimen was the complete base of a shrapnel shell, with its cells for the shrapnel intact, measuring six centimetres in diameter and 1·3 centimetres in thickness and weighing 235 grammes, which was extracted, so far as can be remembered, from a pelvic wound with the result that the patient completely recovered. This collection is kept in a glass case in the operation hut together with many interesting pathological specimens preserved in alcohol, chiefly fragments of bone and excised aneurysms of various sorts; the preservation in alcohol has caused a good deal of shrinking and bleaching which might have been avoided by the use of formalin and glycerine. The operation hut consists of three rooms—namely, a well-lighted theatre about 18 feet square, with glass windows along three sides; an instrument room containing instruments, dressings, museum, and sterilisers; and an empty preparation room. Everything was simple, efficient, and cleanly. The only article especially calling for remark was the aseptic dressing invented by Surgeon-General Kikuzi[1] which consists of the charcoal made by burning rice-straw, inclosed in linen bags of three convenient sizes. Straw charcoal is preferred because of its fine division. Rice-straw is used because of the prevalence of rice throughout Japan and China but any straw is equally

[1] Bruns's Beiträge zur Klinischen Chirurgie, Band xxiii.

useful, whether fresh or old, clean or dirty. The straw is simply collected into any convenient iron vessel or in large quantities on the earth, or brick, or stone floor of a room, after which it is set on fire and left to burn itself out in a limited supply of air by covering the vessel in the one case or closing the doors and windows in the other. Bags of ordinary linen, freed from fat and sterilised, are filled with the charcoal under aseptic precautions and the aseptic dressing is complete. Its advantages are that as straw is obtainable almost everywhere it is only necessary to carry the linen bags, that it possesses some bactericidal properties, and that as compared with gauze it is both more absorbent and very much cheaper, costing only one-sixteenth of the price of even the inexpensive gauze made in Japan. In the Mino-Owari earthquake of 1891, when the supply of surgical dressings was cut off for some days by the destruction of the railway, 1600 injured persons were treated with dressings made of rice-straw charcoal at a total cost of 3*s.* 6*d.*

Among the 670 Russian wounded 22 have been operated on for aneurysm, five of these being arterio-venous lesions and the remainder false or spurious aneurysms of arteries. Six false aneurysms were of the femoral artery. Brief notes of some of the cases were made. In one of them the bullet, as was subsequently found, in passing from side to side through both thighs must have grazed the front of the right femoral artery in Scarpa's triangle without injuring the vein. All that was seen at the time of admission was a large pulsating swelling filling the triangle and distending the skin of the limb. On the operating table a very extensive extravasation of blood was found. The femoral artery being controlled in the groin the site of injury of its walls was roughly determined and the vessel was doubly ligatured above and below. The vein was similarly ligatured above and below and the whole tumour with three inches of the artery and vein was removed. The aneurysm had extended right across in front of the femoral vein which, however, was uninjured. The patient had recovered without any untoward sign. There were several interesting cases of injuries of the head, arranged to some extent in series. In one a bullet had entered through the mastoid bone immediately behind the right external auditory meatus, and passing right across the head had made its exit at an almost corresponding position perhaps an inch further back, without causing any symptoms beyond those of local shock. There was not even any headache left and healing had been complete. Another man had been hit half an inch below the inferior edge of the right orbit. The bullet must have passed directly backwards through the malar bone and antrum of Highmore, through the spheno-maxillary fossa and sphenoid bone into the temporo-sphenoidal lobe, and out through the petrous and mastoid portions of the temporal bone. The aperture of exit was just behind the base of the mastoid on the same side. The patient had lost all hearing in the right ear but otherwise he had made a complete recovery. In a third case the wound of entrance was an inch above the left external auditory meatus and that of exit was two inches in front of the right parietal eminence. The injury was incurred on May 1st, 1904, and resulted in a right-sided hemiplegia but this gradually cleared up and finally completely disappeared. In the South African war these side-to-side lesions through the Rolandic area were looked upon as almost invariably fatal. In the present case it was probable that the left motor cortex had alone been injured and that its function had been re-established by the opening up of collateral connexions and by the training of deeper cells to take on cortical functions. There were two or three cases of "fore-and-aft" wounds, one of which must certainly have passed directly through the corona radiata of one side, causing hemiplegia at the time, but recovery was at my visit almost complete. A similar case may be recalled of an officer of the 19th Hussars, seconded to Thorneycroft's Mounted Infantry and hit at Colenso on his first day with his new regiment in a precisely similar way. He was at first completely paralysed on both sides. Six weeks later he was carried on board a hospital ship still almost powerless on one side and finally he was able to walk ashore at the London Docks. Two cases of gunshot wound of the spinal cord were seen. One of these patients was in the low state associated with helpless paralysis on the downward grade. In the other case the bullet had entered beneath the eighth rib in the right flank and had passed apparently through the liver, the vertebral column, and at least the spinal membranes to reach the surface through the muscles of the back on the left side of the eighth or ninth dorsal vertebra. This injury was received on May 1st, 1904, and resulted in total paralysis but after three months the man was able to walk down the ward and back again at marching pace with hardly any dragging of the foot and certainly with no limp. The most probable explanation of this and many similar recoveries is that there had been compression of the cord by a hæmatorrhachis or collection of blood within or outside the spinal membranes and that absorption of this blood allowed the cord to recover its functions.

There were two interesting cases in which a bullet had passed through the brachial plexus, the wound being above the clavicle in one and below it in the other. In the former the man must have had his head almost resting on his shoulder, for the same bullet first passed through the trachea from side to side and thence into the shoulder through the posterior triangle of the neck near its base and out behind. The wounds in the trachea were perfectly healed; the arm appeared to be completely paralysed but the pectoral muscles were not wasted and their function seemed to be retained; the sympathetic was of course uninjured. In the second case the wound of entrance was close outside the coracoid process, while that of exit was below the angle of the scapula of the same side. The musculo-spiral and ulnar nerves were completely severed but no other nerves were injured. The general health of this patient has hitherto prevented operation but suture will certainly be attempted as soon as possible. The first-mentioned patient is, I think, to be let alone. To the many instances of wonderful escape may be added one in which the wound of entrance is marked by a small scar in the median line of the neck two inches immediately below the pomum Adami, while the wound of exit is equally small and equally well healed, one inch to the left of the seventh prominent cervical spine. Recovery has been complete.

In one of the wards there was a series of fractures of the femur set in gypsum. As already observed at Sasebo and Hiroshima, they were all well and securely fixed but there was no valid reason why they should not have had the superior advantages of treatment by extension.

Last of all the cases that these letters will have the privilege of reporting in connexion with this war is one that must be unique. When a bullet strikes a bone one of two things may happen, as was proved over and over again in the South African war. Striking compact tissue it may break it, or striking cancellous tissue it may perforate it, breaking it also or not breaking it, according to a variety of other circumstances. Many instances occurred of bullets drilling a clean path through the cancellous epiphyses of the tibia and femur. But here for the first time on record was an indisputable case of drilling of compact diaphysial bone. The bullet had entered behind, and below, the calf of the leg and had issued from the subcutaneous surface of the tibia exactly nine centimetres (three and a half inches) above the tip of the internal malleolus. The skin wound had healed and the depression in the bone could still be felt, with an unruffled surface of bone in a ring all around it. A skiagram in a plane at right angles to the axis of this track would be a very remarkable record. There is, it is said, a specimen in a Paris museum showing a femur cleanly drilled by the new French bullet but it is believed that this lesion was inflicted in a post-mortem experiment.

It was to me an impressive experience after having visited so many Japanese hospitals and inspected the wounds of so many Japanese soldiers and sailors to come to Matsuyama and find myself in a hospital ward before a row of white men, on an average six inches taller than their opponents, saluting and obeying the Japanese surgeon-general. This feeling was even increased on a visit to the officers' pavilion where there were servants, books, cards, and cigarettes, and the patients were gentlemen all, with whom it would have been a pleasure to stay and to talk more than the few available minutes. One of the officers, a Baikal Cossack, spoke English fluently. It seemed to be a curious inversion of conventional notions when Russian officers were led into captivity in Japan.

In conclusion, an apology must be made for the incompleteness of the foregoing notes. Incomplete they must necessarily be, for once only in each case has there been an opportunity of visiting any particular hospital, and that only through the medium of many officials, to whom a great debt of thanks is due. It may be hoped, however, that enough has been said to stimulate public interest in the official reports of Lieutenant-Colonel W. G. Macpherson, R.A.M.C.,

British attaché with the Japanese forces now in Manchuria, and in the report of the Japanese naval and military medical services which is expected to appear after the conclusion of the war.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*University Intelligence.*

Dr. R. Saundby, professor of medicine in the University, has promised to give a course of lectures upon Medical Ethics to medical students and practitioners during the summer sessions.—Dr. Edward Malins, professor of midwifery, has been appointed examiner in midwifery and diseases of women in the Victoria University, Manchester.—Dr. A. Stanley Barnes, Dr. J. T. Hewetson, and Dr. Thomas Wilson have been re-appointed honorary curators of the pathological museum of the University.

*"Humanised" Milk.*

The report of the deputation from the health committee of the city council, which recently visited Liverpool for the purpose of making inquiries into the method there adopted of supplying "humanised" milk, was considered at the last meeting of the above committee. In view of the good results as shown in the marked diminution of the infantile mortality-rate claimed for it by the Liverpool authorities, it was decided to introduce a similar system into Birmingham and a subcommittee was appointed to confer with the dairymen in the district in order to ascertain whether they would undertake to supply such milk or whether they had any suggestion to make in reference to the provision of such milk by the city authorities. The *Daily Post* dealt with the matter in a leading article in which it deprecated any further experimentation in the direction of municipal trading and was of opinion that the supply of the milk might very well be left to private enterprise. Considerable correspondence followed in the public press. The opponents of the scheme observed that "humanised" milk was milk devoid of antiscorbutic qualities and that its introduction would tend still further to diminish the amount of breast feeding among the masses. The rejoinders were that it is unsatisfactory to leave the "humanisation" of the milk to the mothers who are often ignorant and careless, that it is well-nigh impossible to obtain pure milk and to keep it pure, that the less trouble and expense associated with breast feeding will prevent any further decrease in its practice, and that the introduction of such a supply as that now meditated has been largely responsible for the decided fall in the infantile mortality-rate at Liverpool.

*The Hospitals.*

Mr. Wilfrid Allport, who for the last five years has acted as honorary assistant ophthalmic surgeon to the Queen's Hospital, has been elected honorary ophthalmic surgeon to the same institution in the place of Mr. J. Priestley Smith who has resigned.—The new buildings of the Birmingham and Midland Hospital for Women are rapidly nearing completion. The new convalescent home in connexion with it was opened on Feb. 4th before a large and distinguished company by the Right Honourable the Countess Beauchamp. The home, which is situated a short distance from the main buildings at Sparkhill, is a picturesque house of two storeys with accommodation for 12 patients. At its opening, Mr. J. S. Nettlefold, chairman of the committee of management, made a strong appeal for a further £10,000 in order that the main building might be opened free from debt. It is estimated that the entire cost of the hospital will amount to £40,000, of which sum more than £30,000 have already been promised. The hospital will afford accommodation for 1000 patients per annum.

*The Birmingham Corporation and the Wye.*

The action of the Birmingham corporation in seeking to reduce by seven million gallons daily the compensation water which, by the Act of 1892, it should return to the Wye, was discussed by the Severn Board of Conservators at its last meeting. The suggestion of the chairman was adopted that a deputation should be appointed to wait upon the Board of Agriculture and Fisheries and to object to the proposed reduction on the ground that any further abstraction of water would be injurious to the fisheries of both the Wye and the Severn.

*The Health of the City.*

The report of the medical officer of health for the final quarter of 1904 has just been published. The birth-rate was slightly lower than it was in 1903; the death-rate was the same in the two years. The zymotic death-rate was low but the mortality from respiratory diseases was high. Although the cases of diphtheria reported were less numerous than usual the death-rate was high; this was attributed to parents not sending for medical help early enough and to insufficient use of antitoxin; only 33 per cent. of the patients apparently were treated with antitoxin supplied by the municipality. It was pointed out that the cases of typhoid fever were few despite the fact that the summer was long, warm, and dry; this was taken as indicating that some of the conditions favourable to its development have been removed. Deaths from diarrhœa were relatively few and each was made the subject of an inquiry by one of the health visitors. The death-rate for the week ending Jan. 21st was 19 per 1000, as compared with 19·8 for the preceding week; for the week ending Jan. 28th it was still further lowered to 16·5. The zymotic death-rate remained steadily about 1 per 1000. There has been a slight increase in the number of cases of scarlet fever and diphtheria notified. The number of patients in the typhoid fever wards has been reduced to nine.

*Severe Outbreak of Measles in Wednesbury.*

The epidemic of measles which has recently visited Wednesbury has proved to be of a virulent type; of the 94 deaths from all causes during the last six weeks no less than 41 were attributable to this disease.

Feb. 7th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Annual Report for 1904 of the West Derby, Liverpool, and Toxteth Park Joint Hospital for Phthisis at Heswall.*

THE annual report consists of three reports by the medical officers of the three unions to the Heswall joint committee and also the report of Mr. H. P. Cleaver, the clerk. Each medical officer was only allowed to report on his own cases. In the medical management of the hospital each medical officer sends in his own cases without reference to his colleagues. All cases must have had tubercle bacilli found before admission. The medical officers are on duty in rotation, a month at a time; during that time the medical officer on duty is responsible for all patients, examines and discharges them, prescribes the treatment, and takes notes. He places in the hospital record his opinion of the case on discharge. A medical officer who is not on duty may visit the hospital to examine his own cases. The clerk's report shows the cases in detail with the hospital discharge and the initials of the medical officer discharging; also the results of sputum examination (all done at the Thompson-Yates laboratory), any news of after-results which has reached the hospital, and the report of a special non-medical visitor who was sent round in December last to follow up the cases. Dr. Nathan Raw's report on the cases admitted from West Derby states that 34 patients were under treatment during the year. In ten cases the disease was arrested, 12 were improved, two were not improved, whilst ten remained in the sanatorium. There was no death in the sanatorium during the year. Some of the patients have continued at their work since leaving the sanatorium and report themselves to him at intervals, while others have left the neighbourhood and he has lost sight of them. The sanatorium continues to do the good work for which it was provided. There has been during 1904 a decided improvement in the character of the admissions, most of them being amenable to treatment, and it cannot be impressed too strongly that the treatment, to give the best results, must be commenced in the early stages of the disease. The sanatorium performs a humane and economic work amongst the poor. It rescues some from certain death, it relieves the suffering and prolongs the working life of others, whilst it isolates them all from their ordinary home surroundings, thus preventing the spread of infection to healthy members of the family. It also acts as an educational influence in teaching the patients the nature of the disease and the best methods of resisting its attack. Of the cases from the Toxteth union Dr. David Smart reports

that 12 patients were under treatment during the year. Of the four beds allotted to Toxteth during a greater part of the summer and early autumn one bed was empty and sometimes two beds were unoccupied. This regrettable fact arose from the circumstance that at that period of the year no cases in the Toxteth workhouse infirmary were suitable for sanatorium treatment—that is to say, of comparatively young men, with early signs and symptoms of pulmonary tuberculosis, who would be likely to derive some permanent benefit by residence at Heswall. Dr. Smart, in summarising the results of treatment, says that one patient is dead, two patients are in the workhouse hospital, one has not been heard of (no news since discharge), four have recovered, and four at present are at Heswall, of whom one has recovered, two are improving rapidly towards recovery, and one is doubtful. Dr. J. E. Nevins (Liverpool), in submitting the second annual report, regrets to have to record disappointing results. The patients have in all respects been very much the same as those sent during the first year. The number of patients from Dec. 1st, 1903, to Nov. 30th, 1904, was: admitted, 24; discharged, 24; and remaining in sanatorium, eight. One patient was admitted and discharged twice during the year, making: admissions, 25; and discharges, 26. The results of treatment, including the patients still in the sanatorium, are: disease apparently arrested, four; improved, 23; and unimproved, seven (of whom one was not in long enough for any change). These are the results of the year's working as judged at the time of discharge but they are of no use in estimating the real value of sanatorium treatment. For that it is necessary to have subsequent results. Of the four "arrested" cases two have relapsed, one has died from the secondary effects of pulmonary tuberculosis, and the fourth has died from another disease. The results of the two years' working are as follows: 38 Liverpool patients have been discharged, of whom eight have not reported themselves or have been discharged too recently to show results. Of the remaining 30, 26 have either died from pulmonary tuberculosis or have been readmitted to the Liverpool Infirmary or are in failing health outside from that disease; one has died from renal disease; three have still their disease apparently arrested and of these one has been in the infirmary several times for another disease. Briefly the results are: 38 patients discharged: arrest continued, 3; died, 9; readmitted to infirmary, 16; in failing health outside, 2; and no report or recently discharged, 8. The factors which produce these disappointing results are mainly two: (1) few patients of the parish class in an early stage of pulmonary tuberculosis apply for treatment, and of those who do few are willing or able to submit to the restrictions of sanatorium life, with the necessary long absence from their families; and (2) on discharge from the sanatorium they are obliged to return to the conditions of poverty, bad sanitation, and unsuitable occupation from which they came. It has been said that better results would be obtained if patients were admitted without waiting for bacilli to be found in the sputum. It is a regrettable fact that in some cases, when the disease is sufficiently advanced for its presence to be proved definitely, it has passed the favourable stage for treatment; yet without definite proof of the presence of the bacillus many patients may be called "phthisical" on insufficient evidence, and any statistics founded on unproved cases are apt to be fallacious and lead to a useless expense. None of the Liverpool patients sent to Heswall have suffered by the enforcement of the test. Liverpool has not been able to fill its beds with fairly hopeful cases during the year and the figures given above show that even with the selected cases sent the results have not been satisfactory. Dr. Nevins would recommend that the bacillus test be continued in all cases of tuberculous disease of the lungs (phthisis) and that Liverpool should be allowed to send cases of tuberculous disease in other parts of the body, joints, &c., in which there will not be any such test. Neither the West Derby nor the Toxteth report says anything of what has become of the patients discharged during the first year of the sanatorium's working. Probably if they were included the proportion of failures would be increased as much as in the Liverpool cases (Dr. Nevins's report covering the years 1903–04). The clerk in his report states that the cost, including everything possible, comes to £3 a week per patient. This, he says, may seem large but in some hospitals of this class £3 3*s.* is the ordinary charge. It is true that in some institutions the charge is less but such places are largely kept up by voluntary aid. The sanatorium has now been in occupation for a little over two years and was opened on Dec. 1st, 1902. Since then 114 cases have been admitted, 93 have been discharged, and 21 remain in the sanatorium.

### *Liverpool Royal Infirmary, Annual Meeting.*

The annual meeting of the subscribers to the Royal Infirmary was held on Jan. 26th, Mr. E. R. Bickersteth, the retiring president, being in the chair. Mr. Ralph Brocklebank, the treasurer, in his report stated that the most noteworthy feature of the past year was the large number of patients in the wards and of those suffering from minor ailments to whom relief had been afforded in the out-patient department. The average number of beds occupied had been 263, ten more than last year. On one day there were 286 patients in the hospital. Both these figures were the largest on record. A member of the committee had generously provided means for reorganising the department for the investigation of the causes of death. As a memorial of the late Mr. John Lawrence, a most valuable member of the committee, a bed had been endowed by his friends and colleagues. A bed had also been endowed by the President in memory of his late father who had been surgeon to the infirmary for 42 years. Mrs. Barrow had added to many former acts of kindness by endowing a bed as a memorial of her late husband. The report showed that the cost of the year's work had been £15,269. To meet this expenditure there had been received £12,985 of comparatively assured income. The total expenditure had been £20,102, in which was included the investment of specially appropriated donations of £3000. To adjust the figures £2659 had been transferred from the maintenance fund. From legacies only £575 had been received. From the Hospital Sunday and Saturday Fund grants were made of £3152. There had been 3795 persons treated in the wards and 20,033 out-patients, involving 76,000 attendances. The President, in moving the adoption of the report, said that he was the first medical man who had held the office of president and had been associated with the infirmary for upwards of 50 years. The time had arrived for extending the out-patient department. He would, therefore, make an appeal to the public for liberal funds for the purpose. The infirmary had an additional claim upon popular generosity because of its association with the University and the part it had long played in completing the training of young medical men. References were also made to the loss which the infirmary had sustained in the deaths of Dr. Alexander Davidson and Sir William Mitchell Banks. Mr. Robert Gladstone, the chairman of the Mersey Docks and Harbour Board, was elected president for the ensuing year.

### *Charitable Bequest.*

The late Lady Willox, the wife of Sir John Willox, M.P., has bequeathed £1000 to the Liverpool Sanatorium at Heswall (the annexe to the Hospital for Consumption) which Lady Willox and Mr. W. P. Hartley jointly erected.

### *Birkenhead Education Committee: Proposed Grant to the University of Liverpool.*

At a meeting of the Birkenhead higher education committee it was recommended that a grant of £500 should be made to the University of Liverpool for the year commencing April 1st on condition that £150 should be kept as a scholarship fund and applied, as the committee determined, to the provision of scholarships or maintenance grants or the payment of fees for students and teachers at the University who were residents in Birkenhead.

### *Liverpool School of Tropical Medicine.*

A telegram has been received from Paris from the chairman of the Liverpool School of Tropical Medicine, Sir Alfred Jones, in which he states that he has had an interview with the French Colonial Secretary and those responsible for the administration of the French colonies and called their attention to the work that the Liverpool School of Tropical Medicine is doing. Sir Alfred Jones states that the authorities in Paris appreciate very much the operations of the school and have expressed their willingness to assist by every means in their power. The school has already sent an expedition to the French Senegambia and the latest expedition spent a short time at Conakry.

Feb. 7th.

# WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

### *University College, Bristol.*

THE sixth annual dinner of the University College Colston Society was held in the large hall of the college on Jan. 31st. Dr. Butler, the master of Trinity College, Cambridge, who was one of the guests, referred to the question of the compulsory teaching of Greek. He said that there was perhaps no man living more bound to the Greek language and literature than he was. Yet he had found by experience and by comparing notes with others that however magnificent the results of the study of the Greek literature, language, poetry, and philosophy might be in the case of those who loved Greek and for whom it might be presumed to be well fitted, there was, nevertheless, a very large body of industrious boys for whom it was too heavy a burden if they were also to learn Latin seriously and to take up the many branches that were grouped under the name of "modern subjects."

### *Aberystwith Infirmary.*

The Aberystwith Infirmary and Cardiganshire General Hospital was established as a dispensary in the year 1821 and indoor patients were first taken in for treatment in 1838. At the annual meeting of the subscribers to the institution held on Feb. 4th it was stated that the income of the past year had been sufficient to meet the expenditure but regret was expressed at the scanty support given to the infirmary.

### *The Unemployed in Bristol.*

Early in the year arrangements were made by the Bristol sanitary committee to give employment to men out of work and the city engineer has just reported that up to the end of January applications for work were received from 2502 men, of whom 1748 were notified that work would be found for them, and of this latter number 1236 responded and were given work. An important conference upon the questions of vagrancy and the unemployed was held in Bristol on Feb. 3rd under the presidency of the Right Hon. Lewis Fry. A very thoughtful contribution to the subject was made by Mr. J. J. Simpson, the clerk to the Bristol board of guardians. He stated that the official census of those sleeping in the casual wards of the 645 unions throughout England and Wales showed that for some years prior to 1900 the number was stationary at rather under 5000 but year by year since then there has been a steady increase until last year there were 7634 on a given date. Of these, 87½ per cent. were men, 10 per cent. were women, and 2½ per cent. were children. With a view to ascertain the proportion of actual vagrants returns were obtained of the total number of tramps sleeping in the Gloucestershire and Somersetshire workhouses on the night of Jan. 28th, 1905. These amounted to 448, of whom 274, or 61 per cent., were considered by the union officials to be workmen in search of employment. Mr. Simpson is of opinion that these *bonâ-fide* workmen should still be given food and shelter by the boards of guardians but that the cost should be defrayed by the State, thus insuring uniform treatment. The tramp who will not work, he suggests, should be sent to, and detained in, a labour colony. After some discussion the conference passed a resolution expressing the opinion that destitute working men compelled to seek employment should not be associated with vagrants but should receive maintenance and aid in their search for work and that the vagrants and unemployable should be detained in labour colonies provided or subsidised by the State and open to the inspection of officers of the State appointed for the purpose.

### *Death from an Electric Shock.*

To the more familiarly known risks attending the working of collieries must now be added those attached to electrical installations working at a high voltage, for electricity is now rapidly superseding other motive powers in the working of coal mines. A man in charge of an electric pumping-engine in one of the collieries of the Tredegar Coal and Iron Company was recently found in the engine-house lying on his back quite dead. On one of the knuckles of his right hand there was a burn of about the size of a florin and on the right side of his forehead there was another burn an inch broad at its broadest part and tapering off to about three inches long. No other marks of injuries were found and it is surmised that he met his death owing to a leakage from the plant which was on the alternating system and worked up to a voltage of 600.

### *Death of Mr. Charles Pegge.*

The death occurred at his residence, Baglan House, Briton Ferry, on Feb. 4th, of Mr. Charles Pegge, M.R.C.S. Eng., L.S.A., at the age of 73 years. Up to a few years ago Mr. Pegge was the proprietor of the Vernon House Lunatic Asylum in Briton Ferry, which was at one time the only institution of its kind in Glamorganshire. He was closely identified with the local industries and was for many years medical officer of health of the district, a position now held by his son, Mr. E. Vernon Pegge.

### *Devon and Cornwall Ear and Throat Hospital, Plymouth.*

The eighteenth annual meeting of the subscribers to this institution was held on Feb. 3rd under the presidency of the mayor. The medical report stated that 885 patients were treated during 1904, as compared with 652 in 1903. The financial statement showed that at the end of 1903 there was an adverse balance of £13, which in 1904 was converted to a favourable balance of £22.

Feb. 6th.

# SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

### *Death of Dr. Thomas McKay Youngson.*

His many student and other friends will hear with regret of the death of Thomas McKay Youngson, M.B., C.M. Aberd., which occurred at Longport, Staffordshire, on the morning of Jan. 29th. A son of the late Mr. James Youngson of Aberdeen, Dr. Youngson studied medicine at Marischal College and graduated in 1893. In the course of his college career Dr. Youngson gained several prizes. He was a young man of frank and genial disposition and was very popular with his fellow students. After graduating he commenced practice at Longport where he was successful and gained much popularity. Dr. Youngson held the office of medical officer of health of Wolstanton. He had recently been in somewhat feeble health and his death at the early age of 33 years will be mourned by many friends. Dr. Youngson married an English lady by whom he is survived.

### *Aberdeen Royal Infirmary.*

The annual report of this infirmary shows that the number of patients received during the past year was 840 in the medical wards and 1859 in the surgical wards, making altogether 2699. The total number of cases treated was 917 medical and 1989 surgical, making a total of 2906 cases. Of these there were discharged—recovered, 1235; improved, 949; unfit or at desire, 286; died, 217; making a total of 2687; and remaining in the hospital on Dec. 31st, 219. The average daily number of occupied beds was 217—the highest being 244 on March 18th and the lowest 189 on July 24th. The average number of days in hospital of each patient was 27·3. The operations performed on in-patients numbered 1546. The death-rate was about 7·5 per cent. of the cases treated. The deaths which took place within 48 hours after admission numbered 51, having mostly occurred in cases of severe injury or of a hopeless nature. Deducting these from the total number of deaths the rate is reduced to about 5·7 per cent. Compared with the preceding year the cases treated showed an increase of 166. The average number of beds occupied remains the same but the average period in hospital of each patient is reduced by 1·5 days. The number of operations has increased by 291. There were 12,715 out-patients who received advice and treatment, being an increase of 1827 over the numbers for last year. The rapid increase in out-patients is forcing upon the board the question of extended accommodation in this department. The very large number who accept the services of the hospital in both in- and out-patient departments bears testimony to the confidence reposed in the infirmary by the public. The following is an abstract of income and expenditure for the year: ordinary income, £11,254 15*s.* 3*d.*; ordinary expenditure, £11,937 3*s.* 6*d.*; deficit on ordinary account, £682 8*s.* 3*d.*; extraordinary income (legacies, &c.) available for current expenses, £365 11*s.*; deficit for 1904, £316 17*s.* 3*d.*

Feb. 6th.

## IRELAND.

(FROM OUR OWN CORRESPONDENT.)

*Royal Victoria Hospital, Belfast.*

THE old Royal Hospital has been let for a tourists' hotel, with the result that an income of about £400 per annum will be secured for the funds of the new institution. The receipts for the year 1904 have exceeded the expenditure by about £700 and, the prospective income being good, notice has been given that at the next meeting of the board of management a motion will be proposed to open another "unit"—that is, a male and a female ward each with 16 beds, making 32 in all. It is calculated that £1000 will maintain a unit.

*Health of Belfast.*

A very large and influential deputation appeared before the city corporation on Feb. 1st to protest against the sewage from the new infectious diseases hospital being conveyed into the ordinary sewers. The chairman of the public health committee, in reply, said that the sewage from this place would pass through disinfecting tanks and would be thoroughly disinfected before being pumped into the general sewer and that the excreta from the small-pox hospital would be burned in the incinerator. Further, he said that those who objected to this plan of conveyance of the drainage could suggest no alternative scheme, to which the deputation reply that it is none of their business but the duty of the city authorities who built the hospital and who could call in expert advice. He also said that the sewers from the union infectious diseases hospital opened into the public sewers of the city, the reply to which is that this is the remains of an old system which no public health authority would tolerate now and offers no excuse in the case of a new up-to-date infectious diseases hospital; besides, if there is any weight in such an argument, why disinfect at all the sewage from the new infectious diseases hospital? But, as explained at the meeting of the city corporation, when this question was discussed on Feb. 1st, by Alderman Harper (a leading solicitor in Belfast), it is doubtful whether the Belfast corporation can legally bring one particle of sewage from Purdysburn in County Down, outside the city area, through the city sewers and tip it at the entrance to Belfast Lough. He pointed out that the privilege of bringing sewage and emptying it into Belfast Lough was given to the council by Act of Parliament on the clear understanding that it was to be submitted to bacterial treatment and, in the face of recent investigation on that subject, no one could deny that this had not been done. If the council had not up to the present taken precautions to treat bacterially all the sewage already being discharged into Belfast Lough (as it was bound to do by Act of Parliament), why should it add to this the dejecta from patients in an infectious diseases hospital outside its area in another county? The question is one surrounded with difficulties and after a long discussion it was decided to call a meeting of the corporation to deal with the whole subject. At a further influential meeting of citizens held on Feb. 6th it was pointed out that before making new sewers or sewerage works three months' notice should have been given in the daily press and it is alleged that no such notice has been given in the case of the sewers from the infectious diseases hospital. Typhoid fever is gradually decreasing, scarlet fever of a mild type still prevails, and the number of cases of small-pox remains about the same.

Feb. 7th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Unqualified Medical Practice in Germany.*

THE Government Medical Department has undertaken an investigation into the conditions of unqualified medical practice which is not illegal in Germany provided that certain limitations are observed. The requisite details were collected by the local medical officers of health and the newspapers have published some remarkable evidence with reference especially to the training of the practitioners in question. It appears that more than 75 per cent. of them have received only such general education as is given at a common school, while their professional training is so imperfect that only a few have any knowledge of medicine, these being for the most part men who had formerly been either pharmaceutical chemists or else medical students who had failed to pass the examinations. In the same category may also be placed persons who had formerly been nurses, attendants, or servants either in hospitals or in the employment of medical men. The report states that in some country places there are families which for generations have treated accidents, fractures of bones, and sprains, and in these families such medical knowledge as they possess is transmitted from the older members to the younger ones. This is especially the case in the families of shepherds who have an extensive practice in certain districts. Some of the unqualified practitioners declared that they had learned the theory of the subject by reading scientific books or by attending scientific or popular lectures. It must further be mentioned that there are colleges founded and supported by certain societies where students may obtain some medical training and even a diploma but the latter is of course not recognised by the authorities. It is said in the report that a good many of these practitioners had made previous trial of several other professions before devoting themselves to medical work as a last resource. Moreover, in addition to the quack practitioners there are in country places a good many persons belonging to the educated classes, such as clergymen and their wives, teachers, property owners, and others, who distribute medicine to the disadvantage both of the medical profession and of the patients.

*Death of Professor Abbe.*

Professor Abbe, who died in Jena a fortnight ago, though not a medical man, nevertheless contributed in a remarkable degree to the progress of medical science, for the high stage of development which microscopy has now reached is largely due to the scientific spirit and the technical skill which were combined in him. Professor Abbe began his career as a *privat-docent* at the University of Jena. At that time Herr Zeiss had in the town a fairly good business as a maker of microscopes and other optical instruments, and Professor Abbe was engaged by him for the purpose of making the optical and mathematical computations which are so necessary in that description of work. While thus engaged he devised the forms of achromatic condenser and object-glass which bear his name, improvements which gave a great impetus to bacteriology and enabled important advances to be made in many other directions. He subsequently became a partner in the firm which through him had acquired a world-wide renown and in 1888 he was left sole proprietor, whereupon the spirit of philanthropy and self-abnegation which was so marked a feature of his character induced him to forego his rights of ownership and to devote the proceeds of the business to promoting the welfare of the community. The Zeiss Optical Works were accordingly changed into a sort of public institution managed by a committee and the profits were utilised (1) for the benefit of the 2000 workmen employed in the factory who became in some degree partners in the business; (2) for the advancement of science; and (3) for the benefit of the general population of Jena. The workmen shared in the profits, their daily hours of work were shorter than at any other factory, and their official and compulsory assurance was supplemented by additional assurance against want of employment and other difficulties. A library, a reading room, and other institutions for the use of the inhabitants of Jena were also provided and the teaching of science was aided by the establishment of lavishly furnished laboratories in the University. It is decidedly unusual for the owner of a very lucrative business voluntarily to surrender the profits derived from it. Professor Abbe, however, preferred to occupy the position of an employé of his own factory, drawing a small salary which was no more than sufficient for a modest livelihood.

*Etiology of Scarlet Fever.*

Dr. Siegel of Berlin, writing in the *Medicinische Klinik*, states that he has discovered in the blood of patients suffering from scarlet fever small gelatinous discs containing a nucleus but not possessing the faculty of spontaneous locomotion. On staining the preparation with eosin blue the nucleus becomes visible in different stages of division, varying from simple bisection to disintegration into motile spores. In rabbits which have received injections of blood taken from scarlet fever patients the above discs appear in the liver, the kidney, and the spleen. They belong to the protozoa and in some respects, though not in all, they are very like the corpuscles of vaccine lymph.

Feb. 6th.

# EGYPT.

(FROM OUR OWN CORRESPONDENT.)

*The Egyptian Government Medical School.*

THE annual dinner of the members of the staff has just taken place and was attended by the 15 teachers, all of whom are now Englishmen with the exception of three Germans and one Egyptian. The guest of the evening was Dr. W. St. C. Symmers who is this week resigning the chair of pathology here for that at Queen's College, Belfast. His colleagues seized the occasion to present him with a large silver bowl and H.H. the Khedive has graciously expressed his intention of conferring a decoration upon him. Among the guests were Mr. Reginald Harrison and Professor Arloing, the well-known veterinary expert of Lyons, who has been sent here by the French Government to study the various diseases which affect cattle in this country. It is wonderful what progress the medical school has made since it passed into European hands. In 1890 the only European teacher was a Frenchman who knew no Arabic which was the only language understood by the students. Now, only 15 years later, the students are all conversant with English, pursue their studies with the aid of English text-books, while anatomy, physiology, chemistry, pathology, hygiene, medicine, surgery, and forensic medicine are all properly taught, a modern library has been formed, museums are slowly growing, and laboratories attract workers from Europe. In this school Dr. G. Elliot Smith has discovered an interesting confirmation of the Darwinian theory while working at the brains of the Soudanese and the Egyptians and Dr. Looss has proved to the satisfaction of all that ankylostoma embryos can, and do, enter the human body by means of the skin. But the one dark spot of the School of Medicine is the almost complete absence of European assistants. The Egyptian Government for many years has had the excuse that money was not forthcoming for all reforms but now that means are provided assistants should be furnished at once to those who are engaged on scientific research which adds to the knowledge of the whole civilised world. In most colleges senior students can be trained to act as demonstrators and assistants under their professors but in Egypt this is at present impossible because the Sanitary Department, menaced by plague and other epidemics, needs the services of all available graduates directly they are set free from the hospital.

Cairo, Jan. 30th.

# CANADA.

(FROM OUR OWN CORRESPONDENT.)

*Toronto General Hospital.*

The annual report of the Toronto General Hospital for 1904 shows that 12,984 persons received medicine and treatment at either the hospital proper or at its emergency branch in the very heart of the city. In that time 3397 patients were admitted into the wards, which with 280 patients in that hospital at the commencement of the year and 154 births, made a total of 3811 receiving attention in the institution in 1904. The number of patients in the hospital in the month of December, 1904, was 576, of whom 272 were discharged, while 22 died, leaving 282 in the hospital on Jan. 1st, 1905. In December 277 accident cases were attended to at the emergency branch.

*Infectious Diseases in Toronto.*

The medical officer of health of Toronto, Dr. Charles Sheard, has compiled some interesting statistics and comparisons for 1904 and 1903. In December, 1903, there were reported 173 cases of diphtheria, 23 cases of scarlet fever, and 16 cases of typhoid fever; for 1904 the numbers were respectively 227, 50, and 14. The total number of cases reported for the years were as follows: 1903, diphtheria, 1103; scarlet fever, 699; and typhoid fever, 156; for 1904, diphtheria, 1360; scarlet fever, 318; and typhoid fever, 138. The deaths were: for December, 1903, diphtheria, 21; scarlet fever, 3; and typhoid fever, 2; for 1904, 17, 1, and 6. In the returns for 1904 the number of deaths from scarlet fever is shown to be the lowest in six years. The decrease was from 100 in 1903 to 12 in 1904. The total deaths in 1904 from these diseases were as follows: diphtheria, 125; scarlet fever, 12; typhoid fever, 41; and small-pox, 2.

*Canadian Medical Association.*

The thirty-eighth annual meeting of the Canadian Medical Association is to be held this year from August 22nd to 25th at Halifax, Nova Scotia, under the presidency of Dr. John Stewart of that city. Mr. Francis M. Caird of the Royal Infirmary of Edinburgh has promised to deliver the address in surgery. Dr. Howard Kelly of Baltimore, U.S.A., will deliver the address in gynæcology and Dr. J. W. Stirling of Montreal will deliver an address in ophthalmology. In addition to these there will also be addresses in medicine and pathology. The members of the Medical Society of Nova Scotia will not hold their annual meeting this year but will act as hosts to the members of the Canadian Medical Association. Seeing the start that has already been made it is quite safe to say that this meeting of the association will equal the average of recent years.

*Physicians Scarce in Newfoundland.*

A correspondent writes to the *Montreal Star* from St John's, Newfoundland, that in the remote regions of the Newfoundland coast there is great want of proper medical attendance for the fisher folk. It is said that for hundreds of miles in some sections physicians have to go by special boat or schooner to attend upon the sick of these settlements. The hardships have been so great and the mortality so severe that the government of the island has taken the matter up and are appointing physicians to the magistrates of the different townships, with an allowance of $500 per annum, hoping in this way to induce physicians to settle in these out-of-the-way sections.

*Resignation of a Veteran Medical Teacher.*

Senator Michael Sullivan, M.D., has resigned his position as professor of surgery in Queen's University, Kingston, Ontario, after a service of 50 years. When the medical department of Queen's University was founded Dr. Sullivan was one of its first students and he has been connected with it as tutor, lecturer, and professor for half a century. His jubilee will be celebrated in April at the annual college convocation. At that time he will be honoured by being made honorary professor of surgery and the degree of LL.D. will be conferred upon him.

*Canadians and General Laurie's Amendment to the Medical Act.*

Through delay in mails General Laurie's amendment to the Medical Act, which was before the British House of Commons last session, was not before the last annual meeting of Canada's national medical organisation, the Canadian Medical Association, but the matter has been brought before the representative city and local societies in order that General Laurie might have some expression of opinion from the Canadian medical profession regarding this matter. So far as I know the first to deal with it has been the St. Francis District Medical Association of the eastern townships of the province of Quebec, which at its regular meeting on Jan. 14th passed a motion supporting the proposed amendment to the British Medical Act of 1858 whereby medical men of this country may be competent to enter the navy and the army on the same footing as those educated at the British colleges.

*The New Ontario Medical Library.*

Dr. Osler came from Baltimore and spent the last week of 1904 with his Toronto friends and was entertained by his medical friends in this city. On the afternoon of Dec. 29th he formally opened the new home of the Ontario Medical Association, towards which residence he had himself contributed many volumes and $1000. The library starts well in its new home, the total cost of the building, some $10,000, having been raised through the efforts of the President, Dr. J. F. W. Ross, and the honorary librarian, Dr. N. A. Powell.

Jan. 28th.

# NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

*Mortality among Physicians.*

AN interesting account of the mortality among physicians appears in the *Journal of the American Medical Association*. The statement embraces the record of 2142 physicians who died during the year 1904. The ages of these physicians

varied between the limits of 22 and 104 years, the average being about 60 years. The greatest number of deaths occurred at the age of 60 years, the next greatest number at the age of 70, the next at 65, the next at 67, and the next at 75. Above the age of 70 years there were 596 deaths; above the age of 80 years, 241 deaths; and above the age of 90 years, 19 deaths; three had passed the age of 100 years. The greatest age recorded was 104 years. Heart disease heads the causes of death with 205; cerebral hæmorrhage caused 179 deaths. Pneumonia heads the list of clearly defined diseases with 172 deaths, or 7·5 per cent. of the total mortality. There were 36 suicides, 14 by poison and 11 by firearms. The rate of mortality was 17·14 per 1000. The average length of practice was 30 years.

*A Novel Form of Heresy in Court.*

The Supreme Court of Michigan had recently before it what it calls a novel case. The defendant was a teacher of Eddyism and first reader of the First Church of Christ, Scientist, of Detroit. The declaration stated that the defendant was supposed to be a conscientious believer in, and practiser of, the principles of "Christian Science" and mentally and morally qualified and competent to give class instruction in "Christian Science mind healing"; that the plaintiff agreed to pay, and did pay, the defendant $100 for instruction which was given; that by reason of the defendant not being a sincere and faithful believer in, and practiser of, Christian Science the plaintiff received no benefit from the instruction given him; wherefore he sought to recover the money paid and compensation for the time spent in the attempt to learn "to cure disease through the power of Christian Science mind healing." It appeared at the trial that the defendant had had superfluous hair removed from her face by a physician by electrical treatment two or three years prior to the contract with the plaintiff, and as the plaintiff was able to call a medical expert who testified that the superfluous hair was known to pathology by the name of "hypertrichosis" and was a disease, and as Eddyism is opposed to material treatment for disease, the court held that one who had superfluous hair removed was not a true believer in, and adherent and practiser of, the principles of Eddyism. But apart from the consideration that this departure from the true faith, if it be such, occurred two years before the contract with the plaintiff, thus leaving ample time for the defendant to mature her belief, the court deemed it sufficient answer to the plaintiff's contention that, if it be conceded that superfluous hair was a disease, it was also regarded by many as a facial blemish; some concealed it as well as they might by the use of face powder and some had it removed. The defendant, because her little son teased her about the appearance of this superfluous hair, caused it to be removed. This was not done as a treatment of disease but as a means of making herself more presentable. The court thought this did not tend to show that the defendant was guilty of fraud in holding herself out as a teacher of Eddyism. The court added that it was understood that both the plaintiff and the defendant proceeded on the theory that Eddyism, as taught by Mrs. Eddy's book, "Science and Health," was true and that it had determined the case on that assumption. The judgment was in favour of the defendant.

*A National Quarantine.*

The President of the United States in his recent annual message recommends the passage of a law creating a national quarantine. This is one of the most important steps taken in this country towards perfecting a national system of sanitary administration. The great obstacle to progress in creating a national system has been the doctrine of State rights so tenaciously held by the forefathers. In modern times the tendency has been to enlarge the powers and jurisdiction of the general Government in regard to all questions relating to inter-State commerce, and the advantages accruing to the States by the assumption of such duties on the part of the national Government have proved so great that there is less opposition than at any other period in the history of the country to the proposition that the quarantines of the several States should be placed wholly under the control of the Washington Government. The present seems to be a most fitting opportunity to effect this reform. The utter worthlessness of the old quarantines, as conducted by the States, has been abundantly shown, while the few quarantines conducted by the authorities of the public health service at Washington have been of the highest efficiency.

*Incorporation of the American Medical Association.*

A Bill has been introduced into Congress to incorporate the American Medical Association. The object of the Bill is to give more weight and character to the association in all medical matters that come before Congress. The association now represents the entire medical profession of the country and is in a position to exercise great influence on all questions of a national character, as in the promotion of public health reforms, the improvement of the medical department of the army and the navy, and the advancement of the science and art of medicine. But to be effective in its efforts the association must be placed among the institutions which have an incorporation under the general Government.

*Reform in the Medical Department of the Army.*

So great has become the necessity for reforms in the Medical Department of the Army that the President has sent an urgent message to Congress in favour of a Bill making sweeping changes in this service. Accompanying the message is a memorandum by the Surgeon-General which details at length the needs of the service. The commissioned *personnel* of the Medical Department is nearly 200 short of the required number to perform its work at present and the deficiency has to be made good by the employment of civilian physicians under contract. This is an expensive and unsatisfactory expedient in time of peace, while in time of war it heavily handicaps the efficiency of the department. The Surgeon-General states that in the war with Spain the country was scandalised by a monthly death-rate from disease which rose from 2·15 per 1000 in July to 4·08 per 1000 in August. He adds: "The public sentiment of the civilised world demands a better organisation and higher efficiency for the medical department of armies than at any time heretofore." The President remarks: "If the Medical Department is left as it is no amount of wisdom or efficiency in its administration would prevent a complete breakdown in the event of a serious war."

Jan. 27th.

# Medical News.

UNIVERSITY OF OXFORD.—The following degrees have been conferred:—

*B.M., B.Ch.*—Richard Harvey Sankey, Christ Church; John Freeman, University College; John Alexander Vlasto, New College; Eric MacLeod Smith, Queen's College; Edward How White, University College; Arthur Williamson Brodribb, University College; and Archibald Henry Hogarth, Christ Church.

UNIVERSITY OF CAMBRIDGE.—The voting on the proposals of the Studies and Examinations Syndicate respecting the previous examinations will take place in the Senate House on March 3rd and 4th between the hours of 1 and 7 P.M. The syndicate has issued an amended report in which, however, the proposal to allow modern languages to be substituted for Greek is retained.—At the Congregation on Feb. 2nd the following degrees were conferred:—

*Doctor of Medicine.*—S. H. Nathan, Trinity; A. J. Hall, Caius; and S. W. Curl, Downing.
*Master of Surgery.*—A. R. Brailey, Downing.
*Bachelor of Medicine.*—T. C. Lucas, Clare; and C. W. Cunnington, non-collegiate.
*Bachelor of Surgery.*—L. Dukes, Trinity; R. C. Mott, Trinity; and C. W. Cunnington, non-collegiate.

TRINITY COLLEGE, DUBLIN.—At examinations held in Hilary term the following candidates were successful:—

PREVIOUS MEDICAL EXAMINATION.

*Anatomy and Institutes of Medicine.*—Archibald L. Robinson, George H. Stack, Eleanor E. Pinegan, John W. Lane, and Wallace D. Mitchell.
*Physics and Chemistry.*—John G. W. Ponton, Samuel Swinburne, and Charles O'Brien.
*Botany and Zoology.*—Henry E. M'Cready, John Murdoch, Charles H. O'Rorke, Richard D. FitzGerald, and Wellesley R. Allen.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bern:* Madame Schwenter-Trachsler, M.D., has been recognised as *privat-docent* of Dermatology and Syphilis.—*Bologna:* Dr. Guido Ruata has been recognised as *privat-docent* of Hygiene.—*Bonn:* Dr. Hugo Selter has been recognised as *privat-docent* of Hygiene.—*Breslau:* Dr. G. Baerman has been recognised as *privat-docent* of Dermatology.—*Cracow:* Dr. Stanilas Droba has been recognised as *privat-docent* of Bacteriology.—*Lemberg:* Dr. Heinrich v. Halban has been appointed Extraordinary Professor of Mental and Nervous

Diseases.—*Lund:* Dr. Karl M. Fürst has been promoted to the Ordinary Professorship of Anatomy with the post of Director of the Anatomical Institute.—*Pavia:* Dr. Riccardo Galeazzi of Turin has been recognised as *privat-docent* of Surgery and Operative Medicine.—*Pisa:* Dr. Leone Sestini has been recognised as *privat-docent* of Hygiene.

ROYAL INSTITUTION.—A general monthly meeting of the members of the Royal Institution was held on Feb. 6th, the Duke of Northumberland, the President, being in the chair. Lieutenant-Colonel H. E. Gaulter, Mr. E. P. Harvey, Mrs. Ludwig Mond, Dr. Tcherniac, and Dr. Evelyn C. B. Wilbraham were elected members.

THE HOME OF RECOVERY.—A dinner will be given at Prince's Restaurant, Piccadilly, London, W., on Feb. 16th for the advancement of this new home. It is, of course, true that the homes already in existence are legion but those homes which receive and treat patients with wounds or sores not yet healed are not legion, and are indeed too few for the work to be accomplished. These cases block the hospital beds and exclude patients in urgent need of admission; they get no particular benefit from confinement in hospital, they are not instructive to students, and they keep out more deserving cases. The Home of Recovery is intended to take these slow unhealed cases which are refused at the great majority of our convalescent homes.

MEASURES TO PREVENT THE IMPORTATION OF DISEASE INTO RUSSIA.—The chief medical inspector, Professor Anrep, according to the *Sviet*, has made a journey on the Siberian Railway for the purpose of clearing up the question of how to prevent the conveyance of disease from the Far East into European Russia. He went as far as Tchita and came to the conclusion that the sanitary trains in which the sick are conveyed are in most cases splendidly fitted and possess a sufficient supply of disinfectants and other necessary material. A danger is possible in the movement of reserves, whether discharged or in process of moving from one place to another. This, he thinks, may lead to undesirable consequences and shows the need for special quarantine stations. Such a station it was proposed to establish at Tchita; this town, however, was found to be unsuitable and a position between Irkutsk and Tchelyabinsk is now suggested.

STREET AMBULANCES FOR LONDON.—At the usual fortnightly meeting of the Metropolitan Asylums Board held on Feb. 4th a letter was read from the London County Council, with reference to the letters from the Metropolitan Asylums Board of Nov. 29th, 1904, and Jan. 25th, 1905, in connexion with the proposed conference between a committee of the Council and the ambulance committee of the Asylums Board on the subject of the suggested ambulance service for London. The letter stated that the extent of the desirableness of undertaking the supervision and management of an ambulance service for the convenience of street accident cases was still under the consideration of a committee and it was to be hoped that a report would be made to the Council on the subject at an early date. The letter further stated that at the present moment the question of undertaking the conveyance of cases other than those arising from accidents and casualties in the streets was not under consideration and that it would therefore appear that any action which the Council might take would have regard to different classes of cases from those of mental, medical, and surgical patients with which the Metropolitan Asylums Board intended to deal and that no useful purpose was likely to be served by such a conference as had been proposed.

PROFESSORS OF MEDICINE AND PRIVATE PRACTICE.—The question of professors of medicine undertaking private practice has caused the authorities of the Pirogoff Society to take action as expressed in D. N. Schbankoff's address on the influence of private practice on the general development of the medical profession, which was delivered at the ninth session of Russian medical men in memory of N. I. Pirogoff. He observed that "it was desirable in the interests of science, of the professors, and of the patients that professors of medicine should be suitably paid and that they should under no circumstances fill up supplementary places, open private infirmaries, or yet have private practices for paying patients." Considering this question to be very important, he continued: "The management had addressed the following two questions to the professors of the Military Medical Academy and of the universities: (*a*) Do you consider it possible, and under what conditions, to change over from the present state of the profession to such an organisation of medical aid as would safeguard the sick without it being necessary for the professors to engage in private practice? and (*b*) Do you consider private practice necessary to the professors for a general acquaintance with diseases, their course and issue in various states of society, and that the suppression of these practices would be harmful to the suffering as also to professional work and the advancement of science?"

MIDLAND MEDICAL UNION.—The fourth annual meeting of this society was held at Chesterfield on Jan. 26th. Dr. G. Booth, the retiring President, was in the chair and there were also present Dr. Albert Green, Mr. Richard G. Allen, Dr. G. G. Macdonald, Dr. W. B. A. Smith, Dr. James A. Goodfellow, Mr. V. E. Sutcliffe, Mr. Flavell Edmunds, Mr. B. J. Lee, Dr. S. Worthington, Dr. W. Duncan, Mr. A. Chawner, and the general secretary, Mr. G. S. O'Rorke. The annual report, on the proposition of Dr. Macdonald, seconded by Dr. Smith, was adopted. On the proposition of the President, seconded by Mr. Edmunds, Dr. Macdonald was elected to the office of President. Dr. Booth then vacated the chair and Dr. Macdonald, the newly elected President, presided over the meeting. The officers for the ensuing year were then elected as follows:—Vice-President: Mr. R. G. Allen. Honorary treasurer: Dr. F. R. Mutch. Council: representing the Nottingham branch: Dr. A. Fulton, Dr. J. H. Thompson, Mr. J. H. Cox (honorary secretary), and Dr. J. W. Noble (honorary secretary); representing the Mansfield branch: Dr. G. T. Tate, Dr. E. H. Houfton, and Mr. C. J. Palmer (honorary secretary); representing the Belper branch: Mr. R. G. Allen, Dr. G. G. Macdonald, and Dr. W. B. A. Smith (honorary secretary); representing the Chesterfield branch: Dr. J. G. Shea, Dr. G. Booth, and Dr. W. Duncan (honorary secretary). Honorary auditors: Mr. J. H. Cox and Dr. A. Fulton. General secretary: Mr. G. S. O'Rorke. On the proposition of Dr. Smith, seconded by Dr. Booth, Dr. G. Brittan Gill of Belper was elected a member of the union. Dr. Smith proposed, and Dr. Booth seconded, that a list of the members of the union should be added to the report. The proposition was carried and the general secretary was instructed to add the list accordingly. It was resolved that the annual dinner should be held on Thursday, March 9th, and that the arrangements for the same should be left in the hands of Dr. Booth, Dr. Worthington, and Dr. Shea as a subcommittee.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

Lateral Curvature of the Spine and Pelvic Deviations. By Richard Barwell, F.R.C.S., Consulting Surgeon, Charing Cross Hospital; Surgeon, Cripples' Home. Sixth edition. Price 3s. net.

The Diagnosis and Modern Treatment of Pulmonary Consumption, with Special Reference to the Early Recognition and the Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D. Oxon., M.A. Cantab., F.R.C.P. Lond., Author of the Prize Essay on the Erection of His Majesty's Sanatorium. Second edition. Price 5s. net.

DEUTICKE, FRANZ, I, Schottengasse, 6, Wien; Querstrasse, 21, Leipzig.

Tabulæ Gynæcologicæ. 29 Mehrfarbige auf Pausleinwand gedruckte Lithographische Tafeln mit kurzem erläuternden Text. Herausgegeben von Dr. Friedr. Schauta, O.ö. Professor der Geburtshilfe und Gynäkologie an der Wiener Universität, K.K. Hofrat, und Dr. F. Hitschmann, Assistent der I. Universitäts-Frauenklinik (Hofrat Schauta) in Wien. Preis in Mappe M.120, or 144 Kronen. (Six sheets received, each approximately 24 inches by 30½ inches, and numbered III., VI., VII., XIV., XXV., and XXVI.)

FISCHER, GUSTAV, Jena.

Die Desinfektion der Hände. Von Dr. med. Eugen Engels, Kreisassistenzarzt und Vorsteher der Bakteriologischen Untersuchungsstelle der Königl. Regierung zu Stralsund. Abdruck aus dem Klinischen Jahrbuch, Dreizehnter Band. Price M.5.50.

GLAISHER, HENRY J., 57, Wigmore-street, Cavendish-square, W.

The Intestinal Catarrhs; being a Clinical Study of Colitis, Appendicitis, and their Allies, with a Special New Section on Sprue. By Edward Blake, M.D., M.R.C.S. Second edition. Price 5s. net.

HIRZEL, S., Leipzig.

Sammlung Medizinischer Lehrbücher, VI.:—Lehrbuch der Kinderkrankheiten für Aerzte und Studirende. Von Dr. Adolf Baginsky, a.o. Professor der Kinderheilkunde an der Universität Berlin. Achte völlig neu durchgearbeitete und verbesserte Auflage. Price M.24.

LEWIS, H. K., 136, Gower-street, W.C.

An Account of the Reconstruction of the University of London. Compiled by W. H. Allchin, M.D. Lond., F.R.C.P., University Scholar in Medicine, Member of the Senate, and late Examiner in Medicine in the University. Part I. From the Foundation of the University to the Appointment of the First Royal Commission, 1825 to 1888. (Reprinted from the *Medical Magazine*.) Price 2*s.* 6*d.* net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

The Principles of Chemistry. By D. Mendeléeff. Third English edition. Translated from the Russian (seventh edition) by George Kamensky, A.R.S.M., of the Imperial Mint, St. Petersburg, and edited by Thomas H. Pope, B.Sc., F.I.C. In two volumes. Price 32*s.* net.

MASSON ET CIE, 120, Boulevard Saint-Germain, Paris.

La Séparation de l'Urine des Deux Reins. Par Georges Luys, Assistant du Service des Voies Urinaires à l'Hôpital Lariboisière. Préface par Henri Hartmann, Professeur Agrégé à la Faculté, Chirurgien de l'Hôpital Lariboisière. Price not stated.

METHUEN AND CO., 36, Essex-street, W.C.

Sicily, the New Winter Resort: an Encyclopædia of Sicily. By Douglas Sladen. With 234 Illustrations, a Map, and a Table of the Railway System of Sicily. Price 5*s.* net.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

Clinical Hematology. A Practical Guide to the Examination of the Blood with Reference to Diagnosis. By John C. Da Costa, Jr., M.D., Demonstrator of Clinical Medicine, Jefferson Medical College, Chief of Medical Clinic and Assistant Visiting Physician, Jefferson Medical College Hospital. Second edition, revised and enlarged. Price £1 2*s.* 6*d.* net.

Progressive Medicine (A Quarterly Digest). Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. IV., December, 1904. Price, quarterly, 12*s.* 6*d.* net.; per annum, to subscribers, £2 net.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton Street, Strand, W.C.

An Elementary Treatise on the Light Treatment for Nurses. By James H. Sequeira, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng., Physician in Charge of the Skin Department and Lecturer on Dermatology at the London Hospital. Price 2*s.* 6*d.* net.

Burdett's Hospitals and Charities, 1905. Being the Year-book of Philanthropy and the Hospital Annual. By Sir Henry Burdett, K.C.B. Price 5*s.* net.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin.

Untersuchungs- und Behandlungsmethoden der Kehlkopfkrankheiten. Von Dr. Theodor Heryng. Price, bound, M.12.

THACKER, SPINK, AND CO., Government-place, Calcutta. (THACKER, W., AND CO., 2, Creed-lane, London, E.C.)

A Monograph of the Anopheles Mosquitoes of India. By S. P. James, M.B., I.M.S., formerly with the Royal Society's Malaria Commission in India, and W. Glen Liston, M.D., I.M.S., of the Plague Research Laboratory, Parel, Bombay. Price 24*s.* net.

# Appointments.

***Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.***

BOWMAN, L., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cardenden District of the county of Fife.

BURNETT, ARTHUR H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the Rochdale Infirmary.

BYERS, J. W., M.D. R.C.I., has been reappointed Examiner in the Department of Midwifery in the Royal University of Ireland.

CROSLAND, G. W. KILNER, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Huddersfield Infirmary.

PEARSON, J. SIDNEY, M.A. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and House Surgeon to the Victoria Hospital for Children, Chelsea.

ROWELL, J. GEORGE, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Huddersfield Infirmary.

SCOTT, GRAHAM, M.R.C.S., L.R.C.P. Lond., has been appointed Junior Anæsthetist to the Central London Throat and Ear Hospital.

SHANNON, DAVID, M.B., Ch.B., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

# Vacancies.

***For further information regarding each vacancy reference should be made to the advertisement (see Index).***

AYLESBURY, Royal Buckinghamshire Hospital.—House Surgeon, unmarried. Salary £100 per annum, rising to £120, with board and apartments.

BETHNAL GREEN INFIRMARY AND WORKHOUSE.—Assistant Medical Officer. Salary £100 per annum, with apartments, board, and washing.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Honorarium £100, with board, residence, and laundry.

BIRMINGHAM GENERAL HOSPITAL.—Resident Medical Officer. Salary £70 per annum, with residence, board, and washing.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

CANCER HOSPITAL, Fulham-road, London, S.W.—Assistant House Surgeon for six months, renewable. Salary £70 per annum, with board and residence.

CENTRAL MIDWIVES BOARD, 6, Suffolk-street, Pall Mall, S.W.—Registered Medical Woman as Inspector.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing. Also Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £90 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Two House Physicians for six months. Salary at rate of £30 per annum, with board and residence. Also Physician to Out-patients.

COLCHESTER, EASTERN COUNTIES' ASYLUM FOR IDIOTS, IMBECILES, AND THE FEEBLE-MINDED.—Resident Medical Attendant, unmarried. Salary £125 per annum, with apartments, board, and washing.

EGYPTIAN GOVERNMENT (MINISTRY OF PUBLIC INSTRUCTION).—Professor of Pathology and Bacteriology at the School of Medicine, Cairo. Salary £800 per annum.

GUY'S HOSPITAL.—Five Open Scholarships, three (£150, £60, and £50) in Science and two (£100 and £50) in Arts.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HARTSHILL, STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Assistant House Surgeon for six months. Honorarium of £25, with board, apartments, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £80 a year, with board and lodging.

KING'S COLLEGE (UNIVERSITY OF LONDON).—Professor of Anatomy, Professor of Zoology, and Assistant Physician or Assistant Surgeon for Diseases of the Throat.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with board, residence, &c.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

MANCHESTER, MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £100 per annum, with board, lodgings, and washing.

MEDICAL DEPARTMENT OF THE NAVY, 18, Victoria-street, London, S.W.—Three Dental Surgeons. Salary £1 per diem.

METROPOLITAN ASYLUMS BOARD ASYLUM AT TOOTING BEC.—Second Assistant Medical Officer, unmarried. Salary £180 per annum, rising to £200, with rations, lodging, attendance, and washing.

NEW HOSPITAL FOR WOMEN.—Clinical Assistants.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Pathologist and Bacteriologist. Salary £50 per annum, with lunch.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100, with board, residence, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Curator and Librarian. Salary £120 a year.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square.—Honorary Physician.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent-garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

SOCIETY OF APOTHECARIES OF LONDON.—Gillison Scholarship in Pathology. Value £90.

WESTMINSTER GENERAL DISPENSARY.—Honorary Surgeon.

YORKSHIRE INEBRIATES' REFORMATORY, Cattal, near York.—Medical Superintendent. Salary £250 per annum, with residence, rations, coal, light, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

CAMERON YOUNG.—On Feb. 3rd, at Cauldwell Hall-road, Ipswich, the wife of A. Cameron Young, M.R.C.S., of a daughter.

HAYWARD.—On Feb. 2nd, at The Grange, Wimbledon, the wife of John Arthur Hayward, M.D., F.R.C.S., of a son.

LIGHT.—On Feb. 1st, at Wilton-place, Belgrave-square, S.W., the wife of Edwin Mellor Light, M.A., M.D. Cantab., of a son.

PARAMORE.—On Feb. 2nd, at Judd-street, W.C., the wife of Horace Paramore, M.B. Lond., M.R.C.S. Eng., of a daughter.

## MARRIAGE.

PARK—GRIFFITH.—On Feb. 1st, at St. Edward's Church, Knighton, by the Rev. J. P. Griffith, uncle of the bride, assisted by the Rev. J. F. Fixsen, vicar of Bucknell, and the Rev. M. Lutener (*vicar*), William Norris Park, M.B., of Wylcwm House, Knighton, and Ardioch, N.B., to Stella, daughter of Dr. W. H. Griffith, of Whitehall, Knighton, and late of Hinckley.

## DEATHS.

HARLOCK.—On Feb. 6th, at Summersdale Lodge, Chichester, of pneumonia, Harry Harlock, M.R.C.S., L.R.C.P., aged 44 years.

WELBURN.—On Feb. 6th, at Wardington Vicarage, Banbury, Charles Matthew Welburn, M.R.C.S., L.R.C.P. Lond., aged 39.

***N.B.—A fee of 5*s.* is charged for the insertion of Notices of Births, Marriages, and Deaths.***

# Notes, Short Comments, and Answers to Correspondents.

## THE NECESSITY TO ANSWER A MEDICAL CALL.

On Jan. 7th an inquest was held at the Pear Tree Inn, Woolston, by Mr. B. Hartfield, the county coroner, on the body of George Golding, who had died on Jan. 6th without medical attendance. Evidence showed that about 3.30 A.M. on Jan. 6th the deceased's daughter-in-law went into his room and, thinking that he was ill, went for Mr. O. T. Stephenson. According to her evidence Mr. Stephenson refused to attend unless he was first paid his fee or was given an order from the relieving officer. Mr. A. A. Rogers, who was called to see the deceased after his death, gave evidence that death was due to heart failure accelerated by chronic bronchitis and alcohol. The foreman of the jury asked Mr. P. B. Hayward, a guardian who was present in court, whether the board of guardians could not relax the rule for their medical officers to attend urgent cases without waiting for an order. Mr. Hayward replied that there was nothing to prevent a medical officer attending an urgent order. The jury returned a verdict in accordance with the medical evidence and requested the coroner to bring the case before the South Stoneham board of guardians. The case accordingly came before the guardians on Jan. 17th, when Mr. Hayward is reported to have stated that he could not help thinking that the poor were suffering from the way in which the board treated Mr. Stephenson some time ago in relation to his application for an increase of salary. Previously to that there was no trouble with regard to his attending cases and apparently Mr. Stephenson had now determined to stick out for his legal rights, so to speak. The eldest son of the deceased had forwarded to him a written statement from which it appeared that the son called up Mr. Stephenson between three and four in the morning. Mr. Stephenson declined to go without his fee and added: "If you can get an order from the relieving officer I will go as soon as I get it." Mr. Stephenson, added Mr. Hayward, was no doubt within his legal rights in acting as he did. The matter was finally referred to a meeting of the full board. At this meeting, which was held on Jan. 31st, the matter came up again. Mr. Stephenson, who was present, read a statement in which he denied that any appeals were made to him as parish medical officer and he maintained that the man came as a private patient. He had been out for the four previous nights and was very tired. Mr. Hayward, however, urged that Mr. Stephenson had no excuse as to the four previous nights, as he told deceased's son that if he could get a parish order he would attend at once. This was a case of distress and one which the Poor-law was intended to meet. If such cases were not to be attended to what was the use of their appointing a medical officer? He proposed:

> That the board inform Dr. Stephenson that they regret he did not under the circumstances attend this case and get the parish order afterwards.

This motion was put and carried by 16 to 4 and it was resolved that the decision of the board should be conveyed to Mr. Stephenson in writing by the clerk. From the evidence before us the case would seem entirely to turn upon whether Mr. Stephenson considered that the deceased was a private patient or a parish patient. Mr. Stephenson himself said that he never said anything about an order from the relieving officer. Deceased's son, however, said that Mr. Stephenson did say that he would go if a relieving officer's order was provided. Mr. Hayward, however, seems to have the not uncommon opinion among guardians of the poor who are not medical men that a parish medical officer is bound to attend anybody who comes, whether an order is supplied or not. The majority of the board, however, were not of this opinion and it cannot be too widely known that a parish medical officer is not at the beck and call of anybody who may choose to send for him. We do not suppose that Mr. Hayward would argue that a butcher or a baker should give anybody who came and said he was starving a leg of mutton or a loaf of bread merely upon questions of humanity. Even a Poor-law medical officer is a human being and may be allowed three nights in bed per week. We should advise Mr. Stephenson to bring the whole matter before the Local Government Board as, legally speaking, the deceased being a private patient, the board of guardians had no jurisdiction whatever in the case. It had no right to censure Mr. Stephenson in the way in which it did.

## PRESCRIBING AT RANDOM.

THE Potters' Insurance Company, Limited, was established a few years ago by the principal manufacturers in the Staffordshire potteries and elsewhere and one of the main objects of the company was to deal voluntarily with adult male workers in lead processes in a somewhat similar way to that in which women and young persons are dealt with under the Factory and Workshops Acts. For example, arrangements were made for the periodical examination by the certifying factory surgeon of men employed in lead processes, and it may be incidentally stated that the fees paid to the certifying surgeons were on a higher scale than those to which they were entitled for a similar service in connexion with women and young persons, though within the past few months the Home Secretary has increased the latter scale approximately to that of the insurance company. Since March, 1904, this periodical examination of men has been made compulsory and now all workers in lead processes in earthenware and china factories must be examined by a certifying surgeon once a month. Another admirable piece of work was the distribution by the company of large placards to be placed in the workplaces of the workpeople concerned. These placards point out the necessity of paying constant attention to personal cleanliness, especially as regards the hands, finger-nails, and teeth, and urged the importance of making as little dust as possible and of washing out the mouth before each meal. With such a creditable record and with such an evident desire to combat the ill-effects of working amongst lead it is to be regretted that the company should have been so ill-advised as to send out the following circular letter to certifying surgeons in whose districts there are earthenware and china factories. The letter is addressed from Tunstall, Staffs., is signed by the secretary of the insurance company, and reads:—

> DEAR SIR,—I send you herewith samples of two kinds of mouth wash which are strongly recommended by one of the certifying surgeons of this district for use by persons engaged in lead processes. Arrangements are being made for the sale of the preparations in your district and I shall be glad if you will kindly urge the use of one of them upon the lead-workers coming under your examination—of course, after satisfying yourself of its efficiency.

Then follows the price of the mouth wash. The labels on the bottles containing the preparations bear the names of druggists in Longton but do not in any way indicate the constituents. It is hardly to be expected that even the "strong recommendation" of an anonymous certifying surgeon will suffice to induce his colleagues to advise the use of a mouth wash of which they do not know the composition. They are quite capable of prescribing a mouth wash when one is necessary. One mouth wash contained, according to our analysis, wintergreen, glycerine, alcohol, boric acid, and salicylic acid. In the other carbolic acid appeared to be the chief constituent in association with a foaming agent.

## ASEPTIC FURNITURE.

*To the Editors of* THE LANCET.

SIRS,—In reply to the letter published on p. 334 of THE LANCET of Feb. 4th we beg leave to state that we made up our pattern of aseptic table from the suggestions and at the special request of some leading surgeons who had seen other patterns of aseptic tables and had found certain defects and imperfections in them. These defects were laid before us and after many experiments and much consideration our present registered table was produced and it differs in important details of construction from any other on the market.

With regard to the new St. Mary's Hospital, Manchester, we fitted up not only one of the operation theatres but also a considerable part of the out-patients' department, sterilising room, wards, &c., of the hospital referred to with our improved aseptic table as well as other furniture made of phosphor bronze.

We are, Sirs, yours faithfully,

For Allen and Hanbury, Ltd.,
HENRY LEWIS, Manager.

Wigmore-street, London, W., Feb. 6th, 1905.

## "SUNSHINE IN GUERNSEY."

IN a letter under the above heading which appeared in our issue of Feb. 4th, p. 322, Dr. H. D. Bishop referred to Hastings with 1715 hours of sunshine in 1904 as "the sunniest town in England for that year." A correspondent now writes to us to say that from the municipal meteorological records of Ramsgate it appears that in 1904 that town was blessed with 1726 hours of sunshine.

## "WHAT APPENDICITIS IS."

A CORRESPONDENT has forwarded us a cutting from the *Newcastle Evening Chronicle* of Feb. 2nd, in which there appears the following amazing piece of information under the above heading:—

> Perityphlitis, or, as it is better known, appendicitis, is, according to an eminent physician, inflammation of the tissues surrounding the kidney—round about the kidney in contradistinction to inflammation of the kidneys—and it is extremely difficult to say until an operation has been performed whether the case is appendicitis or inflammation of the kidney itself. The little appendage to the large intestine is a small canal in itself, and is apt to get blocked by seeds, fruit, or something that can give rise to inflammation round about the kidneys. Sometimes an abscess is formed around the appendix.
>
> The operation consists in making an incision through a line down to the kidney, relieving matter and pus, if such were found outside the kidney, and finally extending the wound or extending part of the wound to the kidney itself, to ascertain if there be any stone in the kidney which might be found to be the cause of the inflammation. The operation occupies about half an hour.

We seem to remember that the same eminent physician published the same remarkable tissue of misstatements about the time that His Majesty the King was suffering from appendicitis in the year 1902. The eminent physician is evidently following the steps of the Bourbons who, as is well known, were said "to learn nothing and forget nothing." We all remember that Mr. Hall Caine in his novel

"The Eternal City" suggested nephrectomy as a suitable operation in a case of cancer of the breast but then he is not an eminent physician. It is a pity that responsible organs of public opinion should publish statements upon purely professional matters without previously verifying the truth or falsehood of such.

### A DISCLAIMER.

*To the Editors of* THE LANCET.

SIRS,—I herewith inclose a cutting of a notice appearing in yesterday's issue of our local paper without my knowledge and consent. I immediately wrote to the editor of the paper asking him to insert in his next issue my letter in which I entirely deny any knowledge of the matter. I will forward a cutting from next week's issue.

I am, Sirs, yours faithfully,
ARTHUR H. TURNER, L.S.A. Lond., M.O.H., &c.

Beaconsfield, Feb. 4th, 1905.

*** The notice, to which our attention has already been called, is an advertisement expressing the thanks of a patient to Mr. Turner.—ED. L.

### PHOTOGRAPHY AND HEALTH.

Now that the bright days are coming on and the amateur photographer is thinking about furbishing up the fittings of his cameras and their accessories and hunting about the house for stray developing dishes, trays, tweezers, printing frames, toning solutions, and photographic sundries (not to mention his surreptitious survey of the culinary department and the cook's dishes), we think it will not be out of place to sound a note of warning in regard to his ruby lamp and its connexion with his health. Many a young amateur photographer spends hours down a dark and dingy cellar in the spring-time and summer developing dry plates which may turn out to be negatives or negative quantities and all the while he is holding his nose over a smoking oil lamp emitting an offensive smell. An hour or so of this gives him a headache and he staggers up the stairs and perhaps feels queer for the rest of the day. Very often, with his eyes strained and rivetted on the plate which he is rocking in its earthenware bath, he is perfectly oblivious of the smoking lamp and even when he awakes to realise it perhaps the handle of the lamp is inside and he dare not open the lamp and expose his half-developed plate to the yellow light of the naked flame for fear of "fogging" it. The amateur photographer who uses ruby or other lanterns should buy those having handles to regulate the wick which are accessible from the outside of the lantern and should employ only the best oil. Further, he should see that his dark-room or "den" is properly ventilated while still being light-tight. Some use candles but often they gutter and flare and go out at awkward moments. A better way is to use a gas lantern which can be regulated to a nicety but the best of all ruby lights is perhaps an incandescent electric lamp with ruby glass—the glass, however, must be of a ruby of a deep rich red, as it is difficult to regulate the amount of light emitted by an ordinary incandescent electric lamp.

### THE HYGIENE OF THE BARBER.

On Sept. 24th last there appeared a leading article in THE LANCET with the above title and we are now glad to congratulate Dr. W. Collingridge on the evident spread of hygiene among barbers in the suburbs of London. In the Romford-road we notice that a barber has opened a shop—evidently the proprietor has been converted by Dr. Collingridge—as "The Antiseptic Shaving Saloon."

### THE CASE OF DR. A. D. GRIFFITHS.

*To the Editors of* THE LANCET.

SIRS,—May I be allowed to trespass still further on your space to announce the following further contributions to the above fund?—

| | £ | s. | d. |
|---|---|---|---|
| Amount previously acknowledged ... ... ... | 30 | 18 | 6 |
| Deputy-Inspector-General L. H. Kellett ... ... | 0 | 10 | 0 |
| Mr. W. C. Humphreys ... | 1 | 1 | 0 |
| Dr. Hastings Torney ... | 0 | 10 | 6 |
| Dr. T. D. Griffiths ... ... | 2 | 2 | 0 |
| Mr. Evan Jones ... ... | 0 | 10 | 6 |
| J. D. M. ... ... ... ... | 0 | 10 | 6 |
| Dr. J. Michell Clarke ... | 1 | 1 | 0 |

I am, Sirs, yours faithfully,
A. P. FIDDIAN, Treasurer.

23, The Walk, Cardiff, Feb. 6th, 1905.

### "COMMENDADOR PORT WINE."

In an analytical notice of this wine in THE LANCET of Dec. 24th, 1904, p. 1791, the figures given for the alcoholic strength were (by an oversight) not corrected for temperature. Corrected for normal temperature (viz., 60° F.) they should read as follows: Alcohol, by weight 18·54 per cent., by volume 22·73 per cent., equal to proof spirit 39·84 per cent.

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*Dr. T. Carter Booth.*—The increase of carbonic acid gas (as an index of impurity) could readily be ascertained by means of Lunge and Zeckendorf's simple apparatus (to be obtained from Messrs Baird and Tatlock, Hatton-garden, London, E.C.) Again, it would appear from a note in THE LANCET of Jan. 21st, 1905 p. 195, that small quantities of carbon monoxide in the air may easily be determined by passing the air through a U-tube containing periodic acid at 80° C. In the presence of carbon monoxide iodine is liberated which may be intercepted by chloroform and the amount estimated by the depth of colour produced.

*T. E. L.*—We do not suppose that the practitioner mentioned in the cutting which our correspondent inclosed is in any way responsible for the appearance of the paragraph.

*Inquirer V.*—An analysis of vibrona was published in THE LANCET of Feb. 26th, 1898, p. 532. The basis of the preparation was hydrobromate of cinchona.

*M.R.C.S.*—Our correspondent will find our opinion on the matter set out in a leading article on p. 412 of THE LANCET of August 17th, 1895.

*E. A. P.*—The preparation contains 8 per cent. of citric acid with colouring matter and glycerine.

*Yamatas.*—The bottle sent contained potassium bromide, chloral, and a pungent principle resembling capsicin.

ERRATUM.—An eagle-eyed correspondent writing from Canada informs us that on p. 30 of THE LANCET of Jan. 7th the name "Herder" should be *Herter*. We are much obliged to our correspondent for his correction which is certainly right.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (13th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

**TUESDAY (14th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

**WEDNESDAY (15th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

**THURSDAY (16th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), Guy's (1.30 P.M.).

**FRIDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9. 30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

**SATURDAY (18th).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**MONDAY (13th).**—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Clinical Cases.

**TUESDAY (14th).**—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. W. A. Turner: The Influence of Stigmata of Degeneration upon the Prognosis of Epilepsy.—Dr. A. E. Garrod and Dr. Ll. Wynne Davies: On a Group of Associated Malformations, including almost Complete Absence of the Muscles of the Abdominal Wall and Anomalies of the Genito-urinary Apparatus.

MEDICO-LEGAL SOCIETY (Rooms of the Royal Asiatic Society, 22, Albemarle-street, W.).—8.15 P.M. Discussion on Privileged Communications and Professional Secrecy (opened by Dr. A. G. Bateman).

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Discussion on a Comparison of the Methods in the United States and in England to secure the Purity of Foods and Drugs (opened by Mr. W. S. Glyn-Jones).

**WEDNESDAY (15th).**—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Paper:—Mr. J. E. Stead: Practical Micro-Metallography with Experimental Demonstration.

ROYAL METEOROLOGICAL SOCIETY (70, Victoria-street, Westminster, S.W.).—7.30 P.M. Papers:—Mr. E. Mawley: Report on the Phenological Observations for 1904.—Dr. H. Ellas and Mr. J. H. Field: Observations made during a Balloon Ascent at Berlin, Sept. 1st, 1904.—Mr. J. R. Sutton: The Winds of East London, Cape Colony.

**THURSDAY (16th).**—CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on the Proposed Anthropometric Survey (opened by Mr. E. W. Brabrook, Dr. J. Gray, Prof. H. R. Kenwood, and Dr. F. Warner). (Arranged by the Childhood Society.)

**FRIDAY (17th).**—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Prof. E. J. McWeeney: The Protozoa in Relation to Disease (illustrated by specimens and slides).

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (13th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.) 5.15 P.M. Dr. E. Cautley: Colitis, Acute and Chronic.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Some Complications of Middle-ear Suppuration (illustrated by lantern slides).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. A. J. Whiting: Electro-diagnosis.

**TUESDAY (14th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. H. Green: Clinique. (Medical.) 5.15 P.M. Dr. R. Jones: The Medical Treatment of Insanity.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Some Complications of Middle ear Suppuration (illustrated by lantern slides).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. A. Turner: Selected Cases.

**WEDNESDAY (15th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Owen: Clinique. (Surgical.) 5.15 P.M. Dr. G. H. Savage: The After-Effects of an Attack of Mental Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Ocular Operations.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration:—Dr. D. Grant: Larynx.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Horton-Smith-Hartley: Phthisis and its Morbid Anatomy.

**THURSDAY (16th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. E. Clarke: Ocular Headache: its Causes, Diagnosis, and Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Demonstration of Surgical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture: Dr. G. Johnston: Demonstration of Selected Cases. (Post-Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Dr. Lockyer: Cancer of the Uterus.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. Kellock: Rickety Deformities of the Long Bones.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. A. J. Whiting: Electro-diagnosis.

**FRIDAY (17th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. Lawson: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: High Frequency Currents (illustrated by lantern slides).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Ferrier: Cerebral Tumours.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1904, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

### VOLUMES AND CASES.

VOLUMES for the second half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 9th, 1905.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radia in Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Feb. 3 | 30·26 | W. | ... | 71 | 49 | 38 | 38 | 40 | Fine |
| ,, 4 | 30·32 | W. | ... | 64 | 53 | 40 | 45 | 47 | Overcast |
| ,, 5 | 30·41 | W. | ... | 73 | 55 | 46 | 45 | 48 | Fine |
| ,, 6 | 30·40 | S.W. | ... | 58 | 52 | 48 | 46 | 48 | Overcast |
| ,, 7 | 30·33 | S.W. | ... | 54 | 52 | 46 | 47 | 48 | Raining |
| ,, 8 | 30·48 | S.E. | 0·13 | 57 | 48 | 42 | 43 | 44 | Overcast |
| ,, 9 | 30·39 | S. | ... | 54 | 50 | 43 | 45 | 46 | Overcast |

**During the week marked copies of the following newspapers have been received:**—*Surrey Advertiser, Reading Mercury, Daily News, Liverpool Post and Mercury, Daily Chronicle, Standard, Literary Digest, Aberdeen Weekly Free Press, Plymouth Mercury, Freeman's Journal, Hertfordshire Mercury, Windsor and Eton Express, Liverpool Courier, Eastbourne Chronicle, Morning Leader, St. James's Gazette, Manchester Evening News, Newcastle Daily Chronicle, Newcastle Journal, Bradford Telegraph, Echo, &c.*

## Communications, Letters, &c., have been received from—

A.—Dr. Z. Abdalla, Beneh, Egypt; Dr. S. Jervois Aarons, Lond.; Anglo-American Pharmaceutical Co., Croydon; Mr. H. J. B. Acker, Colmar; Messrs. C. Ash and Sons, Lond.; Professor Clifford Allbutt, Cambridge.

B.—Dr. H. D. Bishop, Guernsey; Messrs. Brady and Martin, Newcastle-on-Tyne; British Lysoform Co., Lond., Secretary of; Bovril, Ltd., Lond.; Birkenhead, &c., Children's Hospital, Secretary of; Bristol Royal Infirmary, Secretary of; Mr. Tom Bird, Lond.; Bristol General Hospital, Secretary of; Birmingham University, Secretary of; *British Food Journal*, Lond., Secretary of; Mr. Albert Browne, Leicester; Mr. H. F. Bergmann, Wiesbaden; Dr. T. Carter Booth, Urmston; Dr. H. C. Bastian, Lond.; Messrs. Burroughs Wellcome and Co., Lond.

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J.—Messrs. J. F. Jones and Co., Paris; Jenner Institute for Calf Lymph, Lond.

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M.—Dr. Noel Maudsley, Ilford; Lieutenant-Colonel Valentine Matthews and the Officers of the Royal Army Medical Corps (vols.), Lond.; Mr. R. D. Mothersole, Bolton; Professor C. K. Mills, Philadelphia; Professor Andrew Macphail, Montreal; Messrs. Michell, Goodman, Young and Co., Lond.; Male Nurses' Association, Lond., Superintendent of; Dr. Ronald Campbell Macfie, Auchterhouse; Mr. R. Merck, Lond.; Professor Stephen Mayou, Lond.; *Motorist and Traveller (The)*, Lond., Editor of.

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O.—Mr. J. R. O'Brien, Lowestoft.

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T.—Mr. C. L. Traylen, Lond.; T. B. P.

U.—University of Durham College of Medicine, Newcastle-on-Tyne, Secretary of.

W.—Dr. Chalmers Watson, Edinburgh; Dr. S. West, Lond.; Messrs. Wilson and Stockall, Bury; Wincycle Trading Co., Lond.; Whitehall Typewriting Co., Lond., Manageress of; Miss Wylie, Broadstairs; Messrs. Whipp Bros. and Todd, Manchester; Dr. Charles Powell White, Lond.

## Letters, each with enclosure, are also acknowledged from—

A.—Messrs. Allen and Hanburys, Lond.; A. D.; A L.; A. V. C.; A. W. D.; A. J. A.

B.—Dr. C. W. J. Bell, Louth; Mr. E. Blatchley, Lond.; Messrs. J. L. Bullock and Co., Lond.; Mr. J. F. Box, Kildonan; Dr. D. Bower, Bedford; Birmingham General Hospital, House Governor of; Blackburn Infirmary, Secretary of; Miss Bullen, Lond.; Barnwood House, Gloucester, Medical Superintendent of; Miss A. Broadbent, Stockport; British Druggists, Ltd., Lond.; B. O. R.; Mr. T. Bevan, Abergwynfi.

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E.—Miss M. K. Evans, Bexley; E. C.; E. W.; E. M.; E. A. D.; E. H.

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